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INTRODUCTION, THE REASON ADVERB, COMPLEMENT VERBS, REVIEW OF EMBEDDING AND CONJUNCTIVE TRANSFORMATIONS, THAT-NOUN CLAUSES, AND THE IMPERATIVE. LANGUAGE CURRICULUM IV, STUDENT VERSION.

BY- KITZHABER, ALBERT R.
OREGON UNIV., EUGENE

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REWRITE OR PHRASE STRUCTURE RULES AND TRANSFORMATION RULES OF GRAMMAR WERE FEATURED IN THIS STUDENT VERSION GRAMMAR GUIDE. THE PHRASE STRUCTURE RULES DEFINED WAYS TO REWRITE OR SUBSTITUTE ONE SYMBOL FOR ANOTHER UNTIL AN UNDERLYING, OR KERNEL, SENTENCE IS FORMED. THE TRANSFORMATION RULES DESCRIBED THE WAYS THAT THESE KERNEL SENTENCES COULD BE CHANGED. IN THIS GUIDE, THESE APPROACHES WERE APPLIED TO THE "REASON" ADVERB, COMPLEMENT VERBS, "EMBEDDING" AND CONJUNCTIVE TRANSFORMATIONS, "THAT-NOUN" CLAUSES, AND THE IMPERATIVE. THE CORRESPONDING TEACHER GUIDE IS ED 010 831. RELATED REPORTS ARE ED 010 129 THROUGH ED 010 160 AND ED 010 803 THROUGH ED 010 832. (PM)

OREGON CURRICULUM STUDY CENTER

INTRODUCTION,
THE REASON ADVERB,
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Language Curriculum IV
Student Version

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LANGUAGE IV

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Student Version

INTRODUCTION TO LANGUAGE IV

As you begin your year's work in language, you should be reminded of two things: First, when you study language you are studying one of the most important aspects of your life. Our civilization would collapse without language. The more accurate the knowledge that we get of language is, the better we will be able to understand just what it is and how man is able to use it. Second, as a speaker of English, you know a great deal about your language already, and you can make use of this built-in knowledge to increase your understanding of how language works.

A grammar of a language is a description of the language, and a grammar which is useful must try to describe completely and accurately all the possible sentences of English. However, we must remember that there is an infinite number of sentences possible in a language, and a grammar which tried to describe each sentence separately wouldn't be very useful. It wouldn't tell us much more about the language than a list of all the sentences which could occur. So we try to see ways in which many sentences and parts of sentences are related, and then we express these relations in the form of rules. In other words, we make a limited number of generalizations that will describe many sentences. Not only does this help us to simplify our description, but it helps us to understand our language better. It helps us, for instance, to see that the sentences of our language have an underlying structure.

We have found that to accomplish the goal of writing a simple but accurate grammar of our language it is necessary to have two kinds of rules--rewrite or phrase structure rules, and transformation rules. Phrase structure rules tell us to rewrite or to substitute one symbol for another until we finally end up with a string of symbols that has the form of a kernel or underlying sentence of our language. Transformation rules describe the ways in which the underlying kernels can be changed.

It may be helpful, at the beginning of this year's work, to review briefly some of the information which is found in the phrase structure rules and the form the rules take. For instance, we know a sentence consists of two parts, a part which is called the Noun Phrase and a part which we have called the Verb Phrase. We know also that while sentences may be declarative,

The school year has begun.

they may also be questions or negatives:

Has the school year begun?
The school year has not begun.

These facts can be put in the form of a rewrite rule which says:

$$S \longrightarrow (Q)\ (Neg)\ NP + VP$$

We make use of symbols in writing the rules because they enable us to talk more simply about the parts of the sentence. Without something to call the various parts we would simply have to list them. Instead we use a symbol to stand for all the items in a given class. Rewrite rules, then, are devices in which the symbols on the right side of the arrow are rewritten to give more specific information about the things the symbols stand for. By this means we can show that the verb phrase part of the sentence (VP) includes auxiliary material which determines the form of the verb; and that it must also include a main verb, and it may also contain elements which show time or place. So we can rewrite the symbol for verb phrase as

$$VP \longrightarrow Aux + Verb\ (Tm)\ (Loc)$$

The auxiliary part of the VP can be divided into several parts. To begin with we need to indicate that the first element in the verb phrase will be one of two forms, past or present. We call this tense (Tns). The verb phrase may also include a modal (such as will, shall, may, etc.) and two other auxiliary or helping verbs, have and be. Have as an auxiliary always causes the next item to take on its en or past participle form.

pres + have + en + begin

have begun

Be as an auxiliary causes the next item to appear with ing.

pres + be + ing + begin

is beginning.

These are very broad generalizations about the auxiliary in English, but they can be expressed very simply in a few rules. Similarly we can write rules to express the large generalization that the English verb can be subdivided into five major subclasses. Some occur with predicate words, some are followed by NP's, some can occur with manner adverbs, etc.

There are also phrase structure rules which make generalizations about the noun phrase part of the sentence. They show that noun phrases include determiner and nouns (which show number); that determiners include articles which are either definite (like the) or indefinite (like a, some, and sometimes $\emptyset$); that nouns have various characteristics: mass and count; animate and inanimate; human and non-human.

Exercise: To help you refresh your memory of the phrase structure rules which you have worked with in earlier years, we list them here. Study each one to see if you remember what the symbols stand for and then write a sentence which illustrates each rule. Put the symbols above the part which illustrates the rule.

Example:

Rule 1 - NP VP

Joe | is my friend.

Rule 6 - NP + pres + have + en + go

Joe has gone.

1. $S \longrightarrow (Q)\ (Neg)\ NP + VP$

2. $VP \longrightarrow Aux + Verb\ (Tm)\ (Loc)$

3. $Aux \longrightarrow Aux_1\ \ (Aux_2)$

4. $Aux_1 \longrightarrow Tns\ (M)$

5. $Tns \longrightarrow \left\{\begin{matrix} pres \\ past \end{matrix}\right\}$

6. $Aux_2 \longrightarrow (have + en)\ \ (be + ing)$

7. $Verb \longrightarrow \left\{\begin{matrix} Be + Pr \\ V_{lnk} + Pr \\ V_{mid} + NP \\ \left\{\begin{matrix} V_{tr} - NP^2 \\ V_{in} \end{matrix}\right\} \end{matrix}\right\} (Man)$

8. $Pr \longrightarrow \left\{\begin{matrix} NP \\ Adj \\ Loc \end{matrix}\right\}$

9. $NP \longrightarrow T + N + N^0$

10. $N \longrightarrow \left\{\begin{matrix} N_{mass} \\ N_{cnt} \end{matrix}\right\}$

11. $N_{cnt} \longrightarrow \left\{\begin{matrix} N_{in} \\ N_{an} \end{matrix}\right\}$

12. $N_{an} \longrightarrow \left\{\begin{matrix} N_{hum} \\ N_{non} \end{matrix}\right\}$

13. $N^o \longrightarrow \begin{Bmatrix} sing \\ plur \end{Bmatrix}$

14. Det $\longrightarrow$ Art

15. Art $\longrightarrow \begin{Bmatrix} def \\ indef \end{Bmatrix}$

Transformation rules:

It is of course possible to rewrite many of the symbols in the exercise above to express further breakdowns. You may remember that transitive verbs can be subclassified as indirect object verbs; verbs which require prepositions; verbs which occur with particles; and verbs which occur with directional adverbs. But we soon arrive at the point where phrase structure rules cannot account simply for many aspects of the language. Nor can they show relations which we feel exist between such pairs of sentences as the following:

Bob slept through class.
Did Bob sleep through class?

The announcement was made by the teacher.
The teacher made the announcement.

The birds have left the nest.
The birds have not left the nest.

To show this kind of relation, transformation rules are required. Some transformations operate on a single sentence, moving elements around or adding or deleting elements. Some transformations operate on two or more sentences.

Exercise: Which of the following sentences can you not account for with the information you now have about your language?

1. I found the cat sleeping on the bed.
2. He made me cut the grass.
3. We found the play exciting.
4. Get out of my seat!
5. It was unfortunate that you were late.
6. It is a pity that you can't find it.
7. He called Bill a coward.
8. I urged him to go.
9. He plays golf for recreation.
10. Don't break the window.

In your work for this year you will be finding ways to explain sentences like those in the exercise above. Some of them can be explained by refining the Phrase Structure rules further. Some will

require transformations. You will be looking for the proper kind of rule for each. As you progress, it may become necessary for you to review parts of the grammar you have learned in earlier years. Your teacher will help you do this at the appropriate point.

Discussion questions:

1. What should a grammar do? How can a grammar help us to better understand our language?

2. How would you explain to your parents why it is desirable to use symbols in talking about our language and in writing rules which describe it?

3. What justification do we have for saying there is an infinite number of sentences possible in our language?

4. What is meant by underlying structure? Can you illustrate this idea?

5. In what ways is our civilization dependent on language?

THE REASON ADVERB

We have added several optional elements to our second phrase structure rule: the time adverbial (Tm) and the place adverbial (Loc). In this unit we will be asking ourselves whether other optional elements can enter the sentence at the same place in the phrase structure rules.

Exercise 1: Make branching diagrams for the following sentences.

1. The fish went through the ladder yesterday.
2. Mother sewed the dress in the kitchen.
3. The tenor sang last year at school.
4. Cleo prepared the meal carefully.
5. The guests will go to the dance tonight.
6. The boys are playing tennis at school.
7. The children swim in the pool in the morning.
8. The children swim in the pool for fun.
9. Popeye eats spinach for energy.
10. The girls bowl for exercise.

Were there any elements in these sentences which you could not identify with the phrase structure rules? List them. What question do each of these elements answer? We will call these elements adverbs of reason.

What kinds of verbs can reason adverbs appear with? To answer this question, look at the following exercise.

Exercise: Write down the main verb in each of the following sentences and indicate what kind of verb it it. If there is a Reason Adverb in the sentence, list it also.

Example: We ride horses for exercise.

Verb	kind	Reason Adverb
ride	Vtr	for exercise

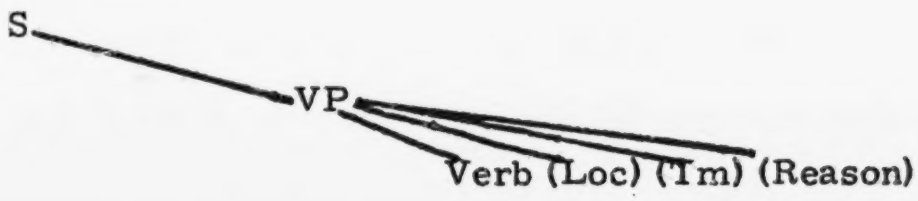
1. The child was ill from exposure.
2. The park closed the gate because of damage.
3. Mildred is going to Mexico for fun.
4. Jim has a fortune because of his father.
5. The bells are ringing loud for victory.
6. The animals became restless on account of the earthquake.
7. The boys called the police for help.
8. Some people carry antihistamine because of allergies.
9. Cass appeared drunk on account of the medicine.
10. The child broke the toy because of anger.

What kind of verbs did you find the Reason Adverb appearing with? If this kind of adverbial is an optional element with all kinds of verbs, where should it be placed in the rules? When we discovered that the

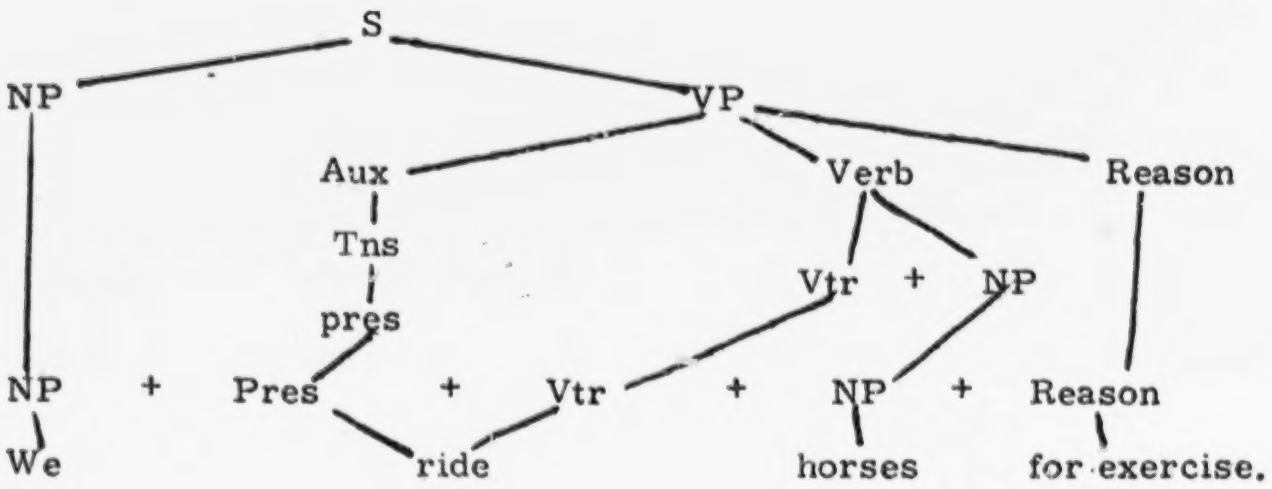
Time Adverbial could appear with any verb we revised Rule 2 and added the symbol Tm (Time Adverbial). If we add Reason Adverb, (which we will simply symbolize as Reason we will be revising the rule again. Remember this is simply a revised form of the 2nd Phrase Structure Rule. It isn't an expansion. It will contain, in addition to the essential elements--Aux and Verb--the optional elements Tm, Loc, and Reason.

Rule (2) VP ⟶ Aux + Verb (Loc) (Tm) (Reason)

The symbol for Reason Adverb will appear in the branching diagram at the place where Verb appears.



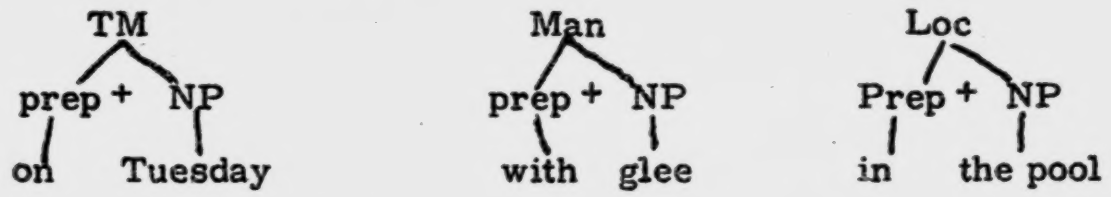
The diagram for the sentence We ride horses for exercise would look like this.



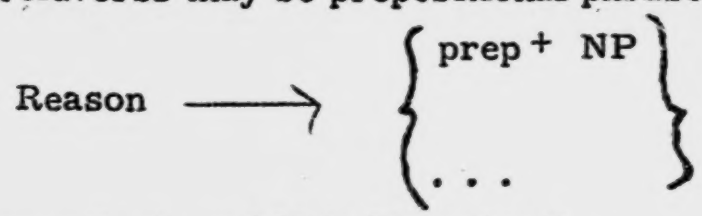
What form do Reason Adverbs take? Look at the Reason Adverbs you listed for Exercise 2. Are there any single words used in this way? What does each begin with and what is the second element in each one?

from exposure
because of damage
for fun
because of his father
for victory
on account of the earthquake
for help
because of allergies
on account of the medicine
because of anger

You have come across elements of this kind before, especially with the other kinds of adverbials. We said that a Tm adverbial could be either a word or a phrase (today, on Tuesday, at three o'clock, ...). Manner adverbials can be either words or phrases (willingly, quietly, with glee, in anger...). Phrases of this kind are made up of elements called prepositions + Noun Phrases. Notice in the examples from the sentences above that several of the prepositions are made up of two or three parts. But they are all followed by a NP. When a sentence element takes the form of a prepositional phrase it can be diagrammed in this way:



And this is the form of the Reason Adverbs in the sentences above. Later we will discuss other forms which Reason Adverbs may take. Can you think of what they might be? We could make a rewrite rule to show that Reason Adverbs may be prepositional phrases or something else:



Now diagram sentences 5, 7, and 10 in Exercise 2.

Exercise 3: Write the symbol strings for the following sentences.

Example: NP + Past + Vtr + NP^2 + Reason

Uncle Ben adopted the child out of kindness.

1. The boys won the game on Sunday.
2. We went to the ocean for a picnic.
3. Joe jumped for joy.
4. We were dancing in the dark for fun.
5. Mother went to town yesterday for a new dress.
6. Father smacked John for impudence.
7. We must be in bed at six o'clock.
8. Father became ill from coffee.
9. Jill does her home work at 8 o'clock.
10. Betty behaved well for the reward.

COMPLEMENT VERBS

Part I

A.

You will remember that the transitive verb class is the largest of the five classes of verbs and that it has two distinguishing characteristics: transitive verbs are always followed by an NP (sometimes called a direct object) and sentences with transitive verbs can undergo the passive transformation. All transitive verbs have these two characteristics, but it is possible to break the class down into many sub-classes which behave in different ways. For instance, you can probably recognize by this time the following subclasses:

1) those which take indirect objects (Vt_{io})-- Bill gave $\underset{NP_2}{\text{his sister}}$ $\underset{IO}{}$ a snake.

2) those which occur with directional adverbs (Vt_{dir})-- They shot $\underset{NP_2}{}$ a rocket $\underset{Dir}{\text{to the moon.}}$

3) those which occur with particles (Vt_{prt})-- We will hand $\underset{Prt}{\text{in}}$ $\underset{NP_2}{}$ our papers. / We will hand our papers $\underset{Prt}{\text{in}}$.

4) those which occur with prepositions (Vt_{prep}) -- Joe stared $\underset{Prep}{\text{at}}$ $\underset{NP_2}{}$ the girl.

You will remember that we expanded our phrase structure rule on the transitive verb to include all of these classes and that we included three dots (. . .) to indicate that we realized there were many other transitive verbs besides these four classes.

$$10.2 \quad Vtr \longrightarrow \left\{ \begin{array}{lll} Vt_{io} & + & IO \\ Vt_{dir} & + & Dir \\ Vt_{prt} & + & Part \\ Vt_{prep} & + & Prep \\ \ldots & & \end{array} \right\} + NP^2$$

In the various parts of this unit we will be trying to identify some other kinds of transitive verbs.

* * * *

Try to remember what you know about the indirect object verb (Vtio). Can you think of examples? You will recognize some indirect object verbs in the following:

Tom gave the teacher an apple.
Mary baked Jim a cake.
The man asked the policeman a question.

What word has been left out of each of the sentences above? These words existed in the underlying kernel. What has happened to them? Is there any other way to write the sentences above? Notice that there are two NP's following the verbs in the sentences. One is the regular NP which always follows a transitive verb. The other is the indirect object which follows a preposition in the kernel sentence. Such sentences can form their passives in two ways.

Exercise 1: In the following sentences find the Vtio verbs by applying the test for such verbs. That is, try to make them passive in two different ways.

1. Bill called John an idiot.
2. The queen gave Snow White an apple.
3. We consider Mary a genius.
4. Joe wrote a letter to Jim.
5. The man built the family a house.
6. The child asked the policeman a question.
7. Amy gave the teacher her attention.
8. Kay gave John a smile.
9. Sally sold the man the ring.
10. The people elected Mr. Johnson President.

Did you find any sentences which could not be made passive in two ways? The verbs in these sentences (1, 3, and 10) look like indirect object verbs, because they are followed by two NP's, but they are obviously different because they cannot form two different passives. Let us look at the last sentence in the exercise.

The people elected Mr. Johnson President.

Does the verb in this sentence qualify as an indirect object verb? Why not? We can say "Mr. Johnson was elected President by the people." However, we cannot say "President was elected Mr. Johnson by the people." Sentences with indirect objects can be written in two different ways.

Amy gave the teacher her attention.
Amy gave her attention to the teacher.

But we can't say: The people elected President to Mr. Johnson. On both counts this sentence does not seem to qualify as a sentence with an indirect object verb.

When we try to write the symbol string for the passive of this sentence we will have some difficulty.

NP^2 + Aux + Be + en + Verb + by + NP^1

Mr. Johnson was elected President by the people.

We can see from this string that Mr. Johnson is the NP^2 or the direct object NP of the kernel sentence. But we do not have any way to account for the word President. However, we see that President is closely

connected with the verb because it stays right with it in the passive transformation. Because verbs like elect seem more complete with an additional NP, this additional NP is called a complement. And verbs like elect which take a complement are called complement verbs. In this unit we will be discovering many kinds of complement verbs to which we will give the symbol V_{tc} + Comp. This symbol means that these verbs are a special class of transitive verbs which can occur with a complement.

But what kind of structures can be complements? We found that indirect objects are made up of certain prepositions (to, for, of) plus an NP. So we wrote a phrase structure rule which said IO $\longrightarrow$ prep + NP. In the sentence about Mr. Johnson we found that the additional word which we have called a complement is an NP. Can we then just write a rule that says Comp $\longrightarrow$ NP? This might work for a sentence like The people elected Mr. Johnson president, or We consider Mary a genius. But these sentences can be written in a different way.

We elected Mr. Johnson to be president.
We considered Mary to be a genius.

How do we account for to be? If the sentence can be written with to be the verb Be must have existed in the underlying kernel. Therefore we can't say that the Comp. (Complement) of these sentences is simply an NP. We have to say that the complement comes from a sentence with Be and that president and genius must be Pr's following Be.

_____ + Be + president
_____ + Be + genius

What would the rest of the sentence be like?

Look at the following group of sentences and see if there is any relation between them:

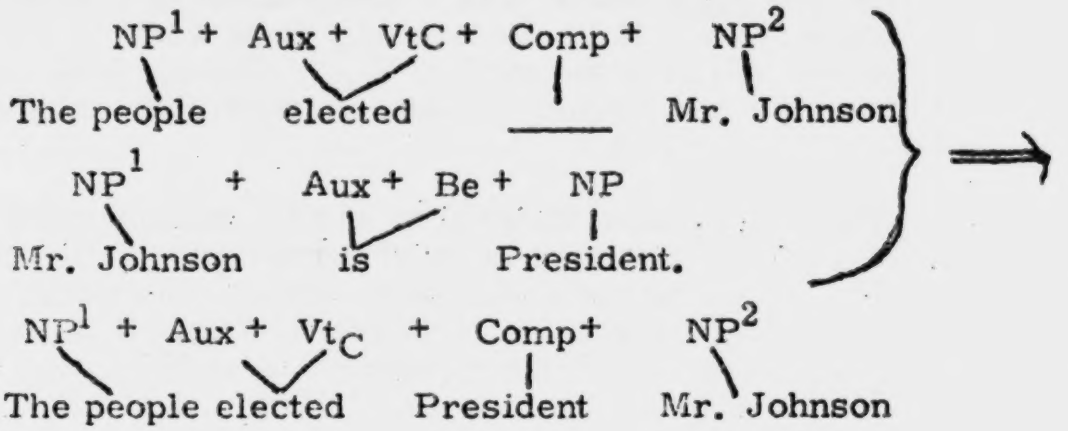
The people elected _____ Mr. Johnson.
Mr. Johnson is President.
The people elected Mr. Johnson President.

We have decided that elect is a verb which can occur with a complement and we have called President the complement. The blank space in the first sentence indicates that a complement can occur there. We are now trying to find out what the complement is. Do you feel that part of the second sentence has moved into the first to produce the third? What has been deleted from the second sentence? When one sentence moves into another we say that an embedding has taken place. As we have before let's call the first sentence above the Consumer and the second the Source. The third would be the Transform.

What is the form of the source sentence?
What do the source and the consumer have in common?
Would other kinds of sentences work as source?

On the basis of your answers to these questions, try to describe what kind of a sentence provides the source for this kind of embedding and what happens in the process.

The transformation in which part of the source sentence is embedded in the consumer can be symbolized in this way (Notice the space which is left for the complement):

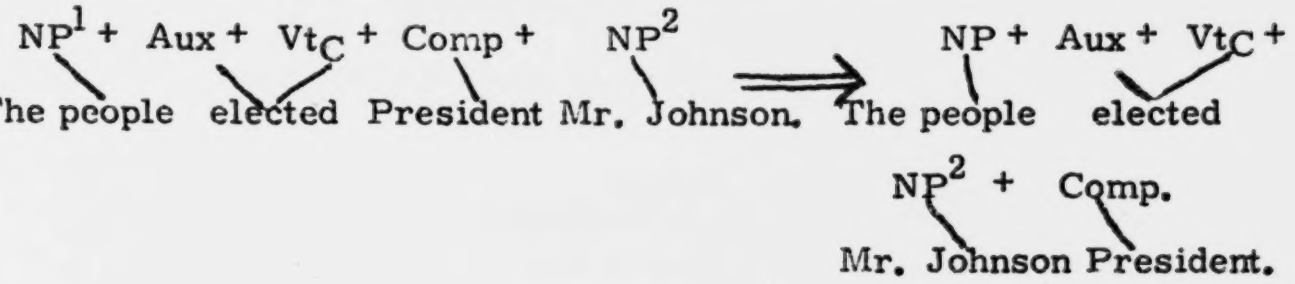

NP1 + Aux + VtC + Comp + NP2
The people elected ___ Mr. Johnson
NP1 + Aux + Be + NP
Mr. Johnson is President.
NP1 + Aux + VtC + Comp + NP2
The people elected President Mr. Johnson

We can see from this example the conditions which must exist before such an embedding can take place. They are:

1) The NP^2 of the consumer must be identical to NP^1 of the source.

2) The source must have the form NP + Aux + Be + NP.

Does the transformation as it is pictured above result in a grammatical sentence? That is, do we say "The people elected President Mr. Johnson."? If not, what additional step must be taken to turn the transformed sentence into a grammatical sentence? What elements of the sentence must change places? Obviously the complement must change places with NP^2. Therefore a second transformation is necessary. We can show it this way:



This final transformation in which two elements change places is called a permutation. It is an obligatory transformation (that is, it must be performed), because without it the sentence would not be grammatical.

Exercise 2: Copy the following sentences. Underline the NP in the consumer sentence that is like the NP in the source. Underline the predicate of the source with two lines. Embed the predicate NP of the source into the consumer by applying the two transformations as shown in the example.

Example: CONSUMER: The people elected (Comp) Mr. Johnson.
SOURCE: Mr. Johnson is President. ⟹

Intermediate step: The people elected President Mr. Johnson. ⟹

Final sentence: The people elected Mr. Johnson President.

1. Consumer: The girl thought (comp) the boy.
   Source: The boy is an idiot.

2. Consumer: The man considered (comp) his wife.
   Source: His wife is a fool.

3. Consumer: The queen dubbed (comp) George.
   Source: George is a knight.

4. Consumer: The class chose (comp) Mary.
   Source: Mary is queen.

5. Consumer: We called (comp) the dog.
   Source: The dog is Harry.

6. Consumer: We nominated (comp) him.
   Source: He is captain.

7. Consumer: We made (comp) him.
   Source: He is the master.

8. Consumer: The troop chose (comp) Mrs. Clark.
   Source: Mrs. Clark is the leader.

We have identified another class of transitive verbs, those which take complements. The symbol for this class can be included in the phrase structure rule which breaks down the classes of transitive verbs.

$$10.2 \quad Vtr \longrightarrow \begin{Bmatrix} Vt_{io} & + & IO \\ Vt_{dir} & + & Dir \\ Vt_{prt} & + & Part \\ Vt_{prep} & + & Prep \\ Vt_{C} & + & Comp \end{Bmatrix} + NP^2$$

B.

Transitive verbs which take complements are called complement verbs. We have symbolized them as Vt_C + Comp. We know that the complement is something that makes the verb more complete.

We elected Bill secretary.

is more complete than We elected Bill.

In the sentences we have worked with so far what has been the source of the complement? Are there other sources? Let us experiment a little with the sentences used in Exercise 2.

Exercise 3: In the following pairs of sentences the word following the Be Verb in the source sentences is an adjective. Embed the adjective from the source in the consumer sentence as a complement. Then apply the obligatory transformation to move the complement beyond the verb. Decide if any of the transformed sentences are ungrammatical.

1. The people elected (comp) Mr. Johnson.
   Mr. Johnson is presidential.

2. The girl deemed (comp) the boy.
   The boy is foolish.

3. The man considered (comp) his wife.
   His wife is idiotic.

4. The class chose (comp) Mary.
   Mary is queenly.

5. The queen dubbed (comp) George.
   George is knightly.

6. We called (comp) the dog.
   The dog is fierce.

7. We nominated (comp) him.
   He is capable.

8. We made (comp) him.
   He is masterful.

Are all of your transformed sentences grammatical? Which are not? Some of the Vt_C + Comp verbs seem to be able to take either an adjective or an NP as complement. Make a list of these verbs. Some seem to be grammatical only with an NP as complement. Make a list of these verbs.

A full grammar of English would have to contain rules which accounted for the fact that some complement verbs can have either an NP or an Adj as complement and some can have only an NP. We shall not write the rules at this time, though we can note the difference.

What have we learned in this unit?

1) Some transitive verbs require a complement to complete their structure.

2) Complements come from source sentences and are embedded right after the verb in the consumer string.

3) We have identified two kinds of complement verbs. Both secure their complements from source sentences which have the form NP + Aux + Be + Pr.

4) One kind permits only the embedding of Pr which is an NP.

(We elected him president, but not *We elected him presidential.)

5. The other kind permits the embedding of either an adjective or an NP.

(We considered him a fool, and also We considered him foolish.)

Exercise 4: Examine the following sentences and do the following:
1) Underline the Vt_C verb in each sentence and label it. If it can take either NP or Adj as complement, put NA in the margin; if it can take only NP, put N in the margin.

2) From these transformed sentences trace back to the underlying sentence strings of the consumer and the source, underlining the verb + complement in each step and labeling it.

Example:

Vt_C Comp

NA We made him master.

from: Vt_C Comp

We made master him

from: Vt_C

We made (Comp) him.
He is master.

1. The workers called the boy silly.
2. The men chose Isabelle queen.
3. The girls considered Gerry foolish.
4. The crew made Jack the leader.
5. She named her daughter Jennifer.
6. The sergeant considered his men fools.
7. The girls made Phyllis happy.
8. Jack imagined Joe a friend.
9. The students thought the test difficult.
10. Joan called him a nuisance.
11. They elected Mary secretary.
12. The referee pronounced him winner.

Exercise 5: Write ten sentences of your own which contain complement verbs with either adjectives or NP's for complements. Then show what consumer and source sentences they came from. Try to think of some verbs besides the ones which have appeared in this unit.

Part II

Some transitive verbs require the addition of a complement, which comes from a source sentence. In other words, complements are the result of a double-base transformation. The source of many complements is a sentence with a Be verb plus a Pr.

(NP + Aux + Be + Pr)

Some verbs--like elect--take only NP's for complements.

They elected (Comp) Joe
Adj
Joe is dogcatcher.

$\Longrightarrow$ They elected$_{V_{tC}}$ Joe dogcatcher.$_{Comp}$

Some--like consider--take either NP's or Adjectives.

Bill considered (Comp) his father
Adj.
His father is mean

$\Longrightarrow$ Bill considered$_{V_{tC}}$ his father mean.$_{Comp.}$

Bill considered (Comp) his father
NP
His father is a pal

$\Longrightarrow$ Bill considered$_{V_{tC}}$ his father a pal.$_{Comp.}$

In both cases, the Pr of the source sentence is embedded as the complement. Notice that the subject NP of the source sentence is identical to the object NP of the consumer. Because of the close relation between the complement and the verb we consider that it is embedded immediately after the verb and is then transformed to a position after the object.

Are there other kinds of complements? To answer this question do the following exercise.

Exercise 5: Underline the verbs and the complements in the following sentences. Try to write the sentence which is the source of each complement you find.

Example: They found him difficult.
Source: He is difficult.

1. Joan called Bill a nuisance.
2. I consider this test easy.
3. The workers called the boys silly.
4. The men chose Linda chairman.
5. The girls consider Gerry foolish.
6. My aunt named her baby Carolyn.
7. The sergeant considered his men fools.
8. Max deemed Jill a friend.
9. The hunters made the scouts comfortable.
10. Jack dared Whitey to be different.

What did you label the verb in sentence #10? Is there an element in that sentence that you cannot account for? Do you see any difference between the Verb + Complement in sentence #9 and sentence #10?

Let us look at what underlies these two sentences.

#9 The hunters made (Comp) the scouts
The scouts are comfortable } ⟹

*The hunters made comfortable the scouts ⟹

The hunters made the scouts comfortable.

You know from our previous analysis that comfortable is a Predicate Adjective which is embedded in the consumer sentence as a complement.

Now what happens in sentence #10? How is it like and how is it different from #9? The presence of to be tells us that again the verb Be must exist in the underlying sentence.

Jack dared (Comp) Whitey.
Whitey is different. } ⟹

*Jack dared to be different Whitey ⟹

Jack dared Whitey to be different.

How does the form of the source compare with the source in #9? How does the embedded complement compare in the two sentences? With verbs like dare, then, not only is the Pr embedded; the verb is also embedded, but in the process it has changed from is to to be. (tns + Be ⟹ to + Be).

Forms of verbs preceded by to are said to be infinitives. Notice that the root or lexical form of the verb is the one used with to. You will remember that this is also the form of the verb to which we add ing. The infinitive is then made up of to + the root (or lexical) form. The infinitive of called is to call; of sang is to sing. What are the infinitive forms of the following: ran, has seen, played, will write, are reading, thought, made, are? One way to think of the difference between infinitives and some other forms of the verb is to consider that to has taken the place of tense.

Can to be appear before the complement in each sentence in Exercise 5? List the verbs from the sentences which are grammatical with to be. List the verbs from the sentences which are ungrammatical with to be. Obviously some kinds of complement verbs cannot appear with to be. (Did you list called and made?) Others seem to be grammatical either with or without. Which ones? For these verbs to be is an optional element in the complement. What about #10? Is to be optional or obligatory? That is, can you leave it out?

In all of the complement verbs we have talked about so far the to be before the complement is generally understood, simply because the Be verb is the main verb of the source sentence underlying the transformation. But verbs like dare demand that to be appear in the complement. This, then, is another kind of complement verb, one which , like the others, takes its complement from a source sentence with the form NP + Aux + Be + Pr. It is different from the complements we have talked about before because it demands that the verb of the source take its infinitive form and become part of the complement.

is different ⟹ to be different

In the example we have looked at--Jack dared Whitey to be different--the embedded Pr is an adjective (different). Could it also be an NP?

They dared him
He is foolish
} ⟹ *They dared to be foolish him. ⟹ They dared him to be foolish.

They dared him
He is a fool
} ⟹ *They dared to be a fool him ⟹ They dared him to be a fool.

We can say then that with verbs like dare, the verb of the source sentence (Be) plus either an NP or an adjective Pr is embedded as the complement. When the embedding takes place the verb takes its infinitive form (to + Be). Thus:

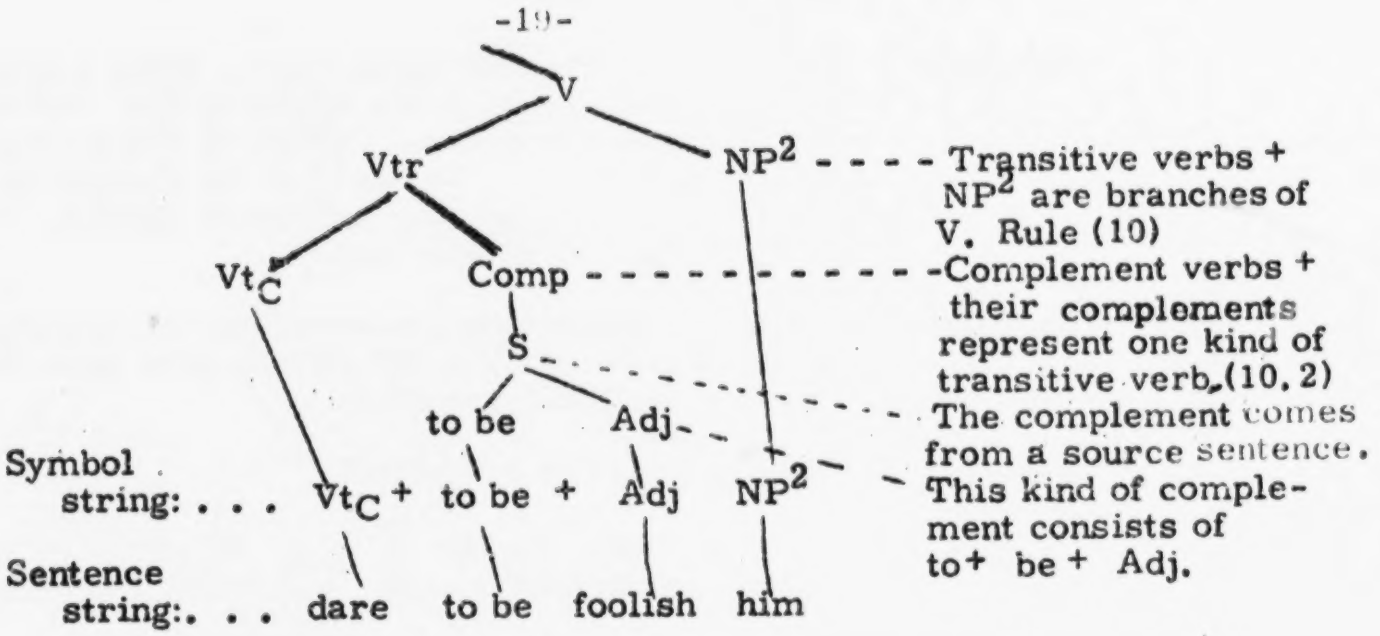
Source: NP + pres + be + Adj ⟹ NP + to + Be + Adj

John is foolish ⟹ John to be foolish.

When this is embedded in They dared John, the John of the source is deleted.

They dared John to be foolish.

Some students may be interested in seeing how complements appear in the diagram. Since complements occur only with certain verbs, they are embedded as a branch of the verb. We have to indicate that the complements, however, come from another sentence. To show this on the diagram we use the symbol S. The following illustrates how to diagram. . . dare him to be foolish. We will show only the part of the diagram in which the complement appears.


V
Vtr
NP2
Transitive verbs + NP2 are branches of V. Rule (10)
VtC
Comp
Complement verbs + their complements represent one kind of transitive verb. (10.2)
S
to be
Adj
The complement comes from a source sentence.
Symbol string: . . . VtC + to be + Adj NP2
This kind of complement consists of to+ be + Adj.
Sentence string: . . . dare to be foolish him

The complement is, of course, out of place, resulting in an ungrammatical sentence: *They dared to be foolish him. What must be done to make it grammatical?

Exercise 6: In the following groups of sentences, underline the NP's which are alike in the source and the consumer. Then underline twice the part of the source which will be embedded as a complement. Write the sentence with the complement and carry on whatever transformation is necessary to make it grammatical.

Example:

The girl considered (comp) the boy } ⟹ The girl considered an idiot the boy ⟹ The girl considered the boy an idiot.

The boy is an idiot.

1. The girls chose (comp) Mary.
   Mary is queen.

2. I took (comp) him.
   He is a friend.

3. They elected (comp) him.
   He is president.

4. I took (comp) the list.
   The list is unimportant.

5. They challenged (comp) him.
   He is honest.

6. Joan's vote enabled (comp) him.
   He is the manager.

7. I want (comp) you.
   You are quiet.

Exercise 7: (optional) In the sentences above, some complement verbs require <u>to be</u> in the complement. Put the letter B after these sentences. Others do not permit <u>to be</u> in the complement. Put an O in the margin by these. In still others, <u>to be</u> may optionally appear. Put OB in the margin by each of these.

Exercise 8: Write the underlying sentences for the following. Show what transformations the strings have gone through to produce the final transform.

Example: I wanted the test to be difficult.

From: I wanted (comp) the test
The test is difficult
⟹ *I wanted to be difficult the test ⟹

I wanted the test to be difficult.

1. I challenged him to be first.
2. Father considered us incompetent.
3. The policeman called Tommy a delinquent.
4. The decision entitled him to be treasurer.
5. The sophomores elected Jackie cheerleader.

B. Choose two of the sentences above to diagram.

Part III

The complement verbs in the sentences we have been dealing with behave in different ways, but they all have some properties in common. The source sentences underlying all of these complements have the form NP + Aux + Be + Pr and the predicate, which becomes the complement after embedding, is either a noun phrase or an adjective. Some verbs (like <u>elect</u>) allow only the NP of the predicate to be embedded. Some (like <u>consider</u>) allow a predicate which is either an NP or an adjective to be embedded. A few (like <u>dare</u>) embed the verb (in its infinitive form) as well as the NP or adjective.

Before we leave verbs whose complements come from sentences with <u>Be</u>, look at the following sentences:

He cooked the steak <u>rare</u>.
She painted the house <u>red</u>.
John colored his paper <u>brown</u>.

How would you account for the underlined words? Could they have come from a source sentence? If so, what? Is there any relationship between

He cooked the steak rare. and He cooked the steak <u>to be</u> rare.
She painted the house red. and She painted the house <u>to be</u> red.
John colored his paper brown. and John colored his paper <u>to be</u> brown.

We can consider the complements in these sentences as also coming from a source sentence with Be.

He cooked (Comp) the steak
The steak is rare
⟹ He cooked the steak rare.

She painted (Comp) the house
The house is red
⟹ She painted the house red.

John colored (Comp) his paper
His paper is brown
⟹ John colored his paper brown.

What kind of Pr does each source sentence have? What part of the source has become the complement? Could you substitute an NP for the adjective? Could we say

He cooked the steak.
The steak was beef.
⟹ *He cooked the steak beef.

or

John colored his paper.
His paper was parchment.
⟹ *John colored his paper parchment.

It seems clear that these complement verbs of this kind require an adjective complement. How many can you think of?

Part IV

So far in our study of complement verbs we have discussed only those complements which come from source sentences with the form NP + Aux + Be + Pr. In each kind the Pr of the source sentence is embedded as the complement, sometimes along with to be.

We should now try to discover if there are complements which have other sources and other properties. Look at the following groups of sentences to see how they are related.

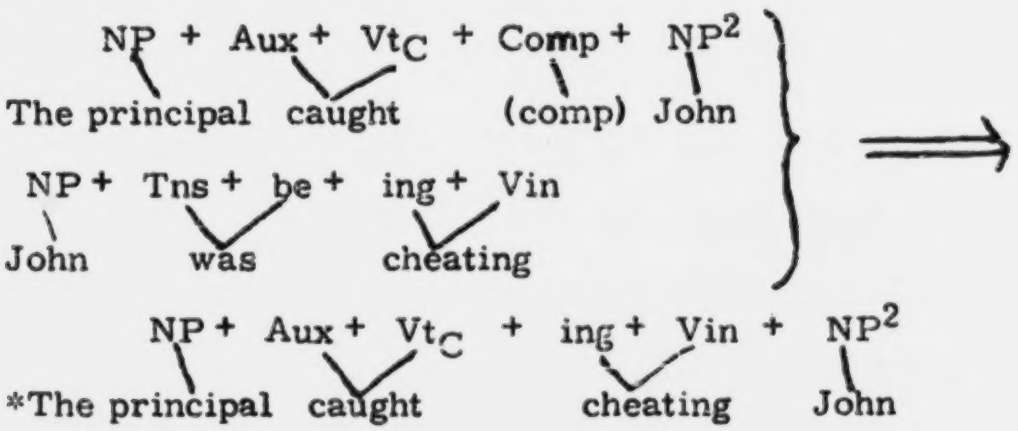
1. The principal caught John.
   John is cheating.
   The principal caught John cheating.

2. Susan discovered the cat.
   The cat was sleeping.
   Susan discovered the cat sleeping.

3. I heard the faucet.
   The faucet was dripping.
   I heard the faucet dripping.

Do you see a relationship between the first two sentences of each group, and the third? What? Could we say that in every group the second (or source) sentence has been embedded in the first (or consumer) to form the third (or transformed sentence)? In each case the embedded part completes the particular kind of verb found in the consumer sentences. Therefore the embedded parts are called complements.

How do they compare with the complements we have discussed so far? How does the source sentence differ in form from source sentences with the form NP + Aux + Be + Pr, in which Be is the main verb? Is Be the main verb in the source sentences above? What form do the verbs in the source have? How much of the source is embedded as a complement in each group? In order to answer this question, let's write the symbol strings for the sentences in the first group.


NP + Aux + Vt_C + Comp + NP2
The principal caught (comp) John
NP + Tns + be + ing + Vin
John was cheating
NP + Aux + Vt_C + ing + Vin + NP2
*The principal caught cheating John

The part that is embedded is the ing + verb. In this sentence ing + verb is cheating. (Comp ⟶ ing + verb)

Does it matter what kind of verb exists in the source sentence as long as there is a be-ing auxiliary? To answer this question look at the following sentences. Notice the kind of verb in each source.

He discovered the maid.
The maid was eating honey. (Vtr)
He discovered the maid eating honey.

I noticed the dog.
The dog was becoming noisy. (Vlnk)
I noticed the dog becoming noisy.

And in our first example we had a Vin (cheat). Apparently, then, the kind of verb in the source is not important as long as there is a be+ing auxiliary so that there is an ing to attach to the verb when it is embedded. Nor does it seem to matter if there are other elements following the verb.

I found the bird.
The bird was flying around the room at night.
I found the bird flying around the room at night.

Whatever occurs after the ing + verb is embedded with it.

Are there any restrictions on the kind of source sentence other than the presence of the be + ing auxiliary? Notice the NP^2 of the consumer and the NP^1 of the source. What is true about them? Apparently with these complements as with the others we have identified, the NP^2 of the consumer must be identical with the NP^1 of the source.

Exercise 9: Using the following verbs, write sentences in which you try to embed a ing + verb as a complement. Which of the following verbs can take this kind of complement? (Don't try to make a complement out of these verbs. Try to embed some other verb in its ing form after them.)

Example: find — I found him sleeping in the closet.

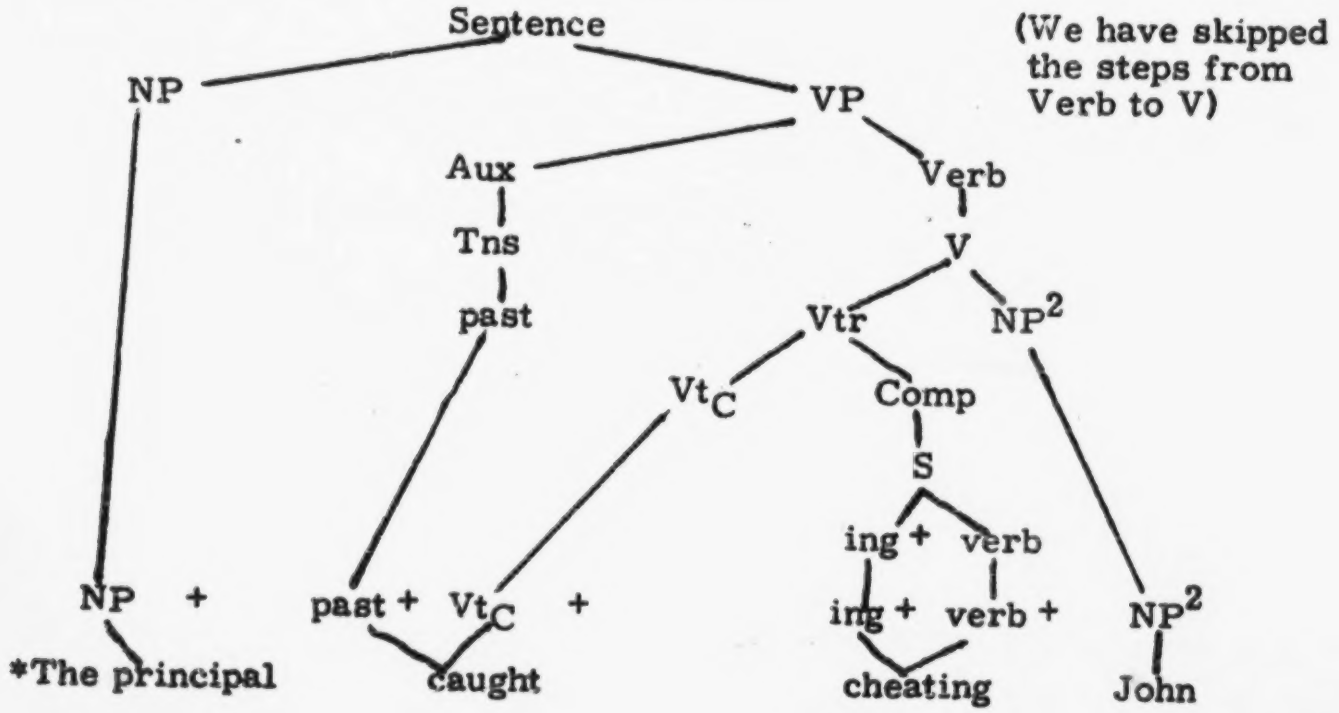
notice	choose	catch	call
hear	teach	imagine	feel
allow	apprehend	perceive	find

Notice again our first example for which we wrote the symbol string.

$$NP + \quad Aux + \quad Vt_C + \quad ing + \quad Vin + \quad NP^2$$

The principal — caught — cheating — John.

Why is the complement placed immediately after the verb of the consumer? Like the other complement verbs we have discussed the complement is part of the verb structure because it is there only to complete the verb. Using $\bar{S}$ to indicate the embedded source sentence and ing + verb to indicate the part of the source which is embedded, we can diagram this sentence.



7. The girls in the camp took exercises, had breakfast, and cleaned up the bunks.

8. I am majoring in aeronautical design and am interested in jet units.

9. The man outside was peeping in the window and quickly noticed me.

10. The tan k was empty in the morning and was standing on the porch.

E. Embed the source sentence in the cnnsumer as a complement, and then reposition the complement to produce a grammatical sentence.

1. Miss Kelly appointed (comp) him.
   Jim is monitor.

2. The fertilizer turned (comp) the lawn.
   The lawn is green.

3. The accident caused (comp) me.
   I am late.

4. I found (comp) the speaker.
   The speaker is dull.

5. The hike made (comp) father.
   Father is tired.

6. I heard (comp) the telephone.
   The telephone was ringing.

F. Reduce the following sentences to their underlying sentence strings.

1. I knew him to be honest.

2. The driver made the passenger angry.

3. Joe is painting his car silver.

4. Ellen calls her fish Cleo.

5. The students elected John president.

6. We discovered the pickets carrying signs.

THE THAT-NOUN CLAUSE

The fact that we can combine two or more kernels makes it possible to produce unlimited numbers of sentences. It also makes it easy to understand sentences that have been created by putting two or more kernels together. This fact will probably help you in understanding the work of this unit.

Have you ever come across sentences like this?

It is unfair <u>that Bill got only a D</u>.
It is lucky <u>that you finished your assignment</u>.

Do you ever use such sentences? Using the knowledge you now have of the structure of English sentences and the way in which one sentence can be embedded in another, how would you account for the underlined portions of these two sentences? After you have thought about this question for a little while, look at the following groups and try to decide if there is a relation between the third and fourth sentence in each group and the first two? If there is, try to describe the relation.

1. It is unfair.
   Bill got only a D.
   It is unfair that Bill got only a D.
   That Bill got only a D is unfair.

2. It is true.
   Some snakes are poisonous.
   It is true that some snakes are poisonous.
   That some snakes are poisonous is true.

3. It was surprising.
   He won the election.
   It was surprising that he won the election.
   That he won the election was surprising.

4. It is possible.
   I will flunk the test.
   It is possible that I will flunk the test.
   That I will flunk the test is possible.

Would you agree that the second sentence of each group has been embedded in the first to form the third and fourth? Was anything changed in the second sentence or added to it before it was embedded? In order to describe this embedding accurately, we will want to examine the kind of sentences which are embedded and the kind of sentences into which they are embedded--the source sentence and the consumer sentence. And then we will want to try to find out where the embedding takes place.

<u>The Consumer Sentence</u>--Are the Consumer sentences in the groups above alike in any way? What kind of verb does each have? What kind of NP^1? What follows the verb in each? You remember that many sentence

Some come from a source which has a be+ing auxiliary.

Example: I heard him whistling.
(He was whistling.)

In each case, we consider that the complement is embedded right after the verb and then transformed to a position after the NP^2.

Example: I considered hilarious the play. $\Longrightarrow$
Comp NP^2 → NP^2 Comp
I considered the play hilarious.

Exercise 12: Can you write symbol strings for each of the following?

Example: NP + Aux + Vt_C + NP^2 + Comp
I consider Oswald a coward.

1. June found Martha cleaning.
2. June took Martha to be the maid.
3. June appointed Martha chairman.
4. Martha caught June laughing.
5. Martha wanted June to go.

Is there an element in #5 which you could not label? Could it be a complement? What form of the verb is to go? If it comes from a source sentence, what might be the form of that source?

Martha wanted (Comp) June.
June goes. } $\Longrightarrow$ Martha wanted June to go.

How has goes become to go? Goes is the result of pres + go. There is no tense in to go. Rather, tense has been replaced by to.

pres + go $\Longrightarrow$ to + go

Can you remember finding a verb with this form in any of the other complement verbs? In sentences like Mother wanted her to be careful the complement comes from a sentence with Be + Pr and both the verb and the Pr are embedded. The Be becomes to be in the embedding. On the other hand Martha wanted June to go gets its complement from a source with an intransitive verb. Can any kind of verb appear in the source of complements of this kind?

Martha wanted (comp) June
June goes (Vin) } $\Longrightarrow$ Martha wanted June to go.

Martha wanted (comp) June
June makes the bed (Vtr) } $\Longrightarrow$ Martha wanted June to make the bed.

Martha wanted (comp) June
June has a good time (Vmid) } ⟹ Martha wanted June to have a good time.

Martha wanted (comp) June
June remains quiet (Vlnk) } ⟹ Martha wanted June to remain quiet.

What happens to elements which follow the verb in the source? Are they also embedded? Do the source and consumer have anything in common?

Exercise 13: Embed the following source sentences in the consumers as complements. (Remember that complements enter the sentence right after the verb and must be transformed to a position beyond the NP^2) Show both steps in the transformation. Underline the complement.

Example: The city permits (comp) us.
We burn trash on Monday. } ⟹

*The city permits <u>to burn trash on Monday</u> us. ⟹

The city permits us <u>to burn trash on Monday</u>.

1. Fletcher ordered (comp) the men.
   The men lower the sails.

2. Carrie wanted (comp) me.
   I go with her.

3. Miss Duke taught (comp) the class.
   The class takes notes.

4. Arthur urged (comp) his father.
   His father visits him.

5. The Scoutmaster chose (comp) Steve.
   Steve raises the flag.

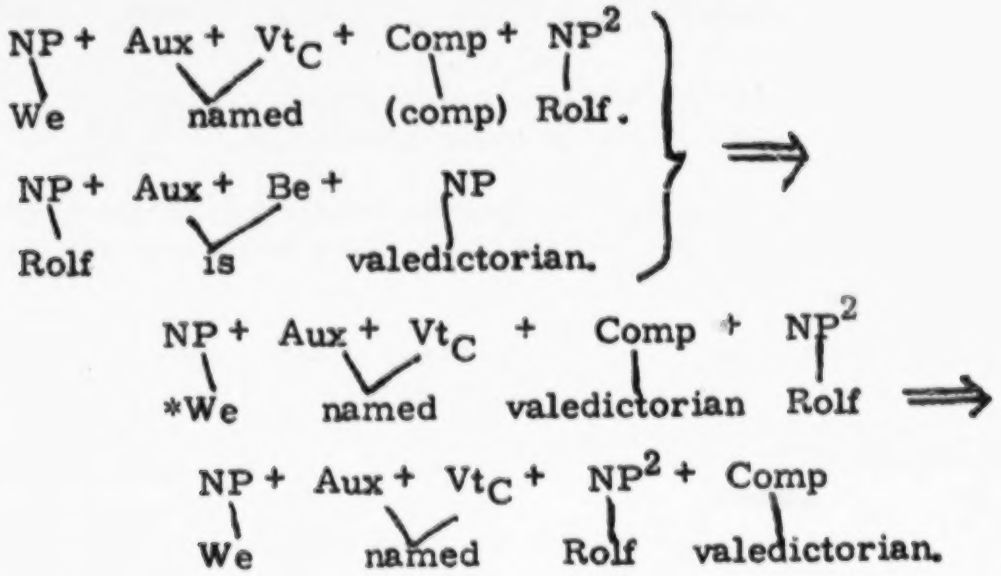
6. Carl persuaded (comp) the boy.
   The boy becomes industrious.

7. Mother forced (comp) Bobby.
   Bobby eats carrots.

8. The law allows (comp) people.
   People drive fast on the freeway.

Exercise 14: Write the underlying sentences which have produced the following. Write symbol strings for each and for the transformations which have produced them.

Example: We named Rolf valedictorian.


NP + Aux + Vt$_C$ + Comp + NP^2
We named (comp) Rolf.
NP + Aux + Be + NP
Rolf is valedictorian.
NP + Aux + Vt$_C$ + Comp + NP^2
*We named valedictorian Rolf
NP + Aux + Vt$_C$ + NP^2 + Comp
We named Rolf valedictorian.

1. He chose Fanny to represent him.
2. Coco wanted the clowns to dance.
3. We found Miss Marlatt knitting.
4. The principal preferred Joan to work.
5. The cop ordered us to stop.
6. The judge persuaded him to release us.
7. The coach is teaching the team to scrimmage.
8. Nancy begged her friend to smile.
9. Aunt Polly meant them to hear.
10. Father allowed Joan to drive.
11. The rain has caused the river to overflow.
12. The sheriff made Joe a deputy.

Exercise 15: Underline the complement verbs and their complements in the following. Put two lines under the verbs and one under the entire complement.

Example: She <u>calls</u> the mouse <u>Cleo</u>.

1. Onions caused him to cry.
2. Pete advised the crew to go.
3. I caught them gossiping.
4. The boy made the dog comfortable.
5. The squad elected Mary majorette.
6. We saw the sharks swimming.
7. The class called him Captain.
8. Charlie wants us to be accurate.
9. Measles forced us to remain.
10. I call that stupid.
11. The faculty voted him the best.
12. The vote enabled him to graduate.
13. Our class heard the band playing.
14. We preferred Mr. Miller to lead us.

Part VI

You have now had considerable experience with complement verbs and with the various kinds of complements they can take. If you were to embed the following source sentences into the consumers they are paired with what would be the result?

1. Consumer: I want (comp) them.
   Source: They apologize. } ⇒ ?

2. Consumer: I taught (comp) him.
   Source: I apologize. } ⇒ ?

3. Consumer: They made (comp) me.
   Source: I apologize. } ⇒ ?

How does the embedded complement for the third differ from the first two? The source sentence for #3 is like the source sentences for the others, but the complement seems to be different.

They made (comp) me.
I apologize. } ⟹

*They made apologize me ⟹

They made me apologize.

The difference seems to be that to doesn't appear in the complement with verbs like make. Can we assume that this is a different form from the complements in 1 and 2? We might if we looked no further. However, when we make the transformed sentence passive

They made me apologize ⟹ I was made to apologize by them.

we can see that the form really is to apologize. In the active form to is deleted. To be accurate, then, we would have to show the steps of the embedding in this way:

They made (comp) me
I apologize } ⟹

*They made to apologize me ⟹

They made me apologize.

How many verbs of this kind can you think of?

Exercise 16: Embed the following source sentences into their consumers, by using the two transformations which apply. In the final derived sentence, put two lines under the verb and one under the complement.

Example: George let (comp) the mouse.
The mouse goes. } ⟹

*George let to go the mouse. ⟹

George <u>let</u> the mouse <u>go</u>.

1. Father forced (comp) John.
   John goes.

2. We saw (comp) the wall.
   The wall crumbles.

3. The advisor made (comp) John.
   John dances.

4. The conductor had (comp) Jim.
   Jim sings.

5. Everyone saw (comp) Liston.
   Liston fell.

6. I felt (comp) the bough.
   The bough breaks.

7. The class heard (comp) the bell.
   The bell rings.

8. Miss Winterspoon helped (comp) Biff.
   Biff writes the story.

9. Miss Winterspoon taught (comp) Biff.
   Biff writes the story.

10. Mr. Walker persuaded (comp) Stewart.
    Stewart takes down the sign.

11. Mr. Walker let (comp) Stewart.
    Stewart takes down the sign.

12. Stewart wanted (comp) Mr. Walker.
    Mr. Walker takes down the sign.

Exercise 17: Underline the complement verbs with two lines and the complements with one. Write the underlying sentences for each.

Example: Wind <u>forced</u> the apples <u>to fall</u>.

Wind forced (comp) the apples.
The apples fell.

1. The ranger allowed us to enter the forest.
2. We found him setting a trap.
3. The people saw the rocket take off.
4. Thoreau could hear the frogs croaking.
5. We will be permitting them to camp here.
6. A scholarship enabled Ellen to enter college.
7. A scholarship helped Maryjane go to college.
8. Good teachers make students correct their mistakes.
9. Some teachers allow us to take books home.
10. Tom noticed the crowd running down the street.

To summarize:

1. In this unit we have identified a new class of transitive verb--the complement verb. They are symbolized as Vt_C + Comp.

   We know that these verbs are transitives because they are followed by NP's and they can be transformed into the passive.

   They are called complement verbs because they occur with an element--in addition to the NP^2--which makes them more complete.

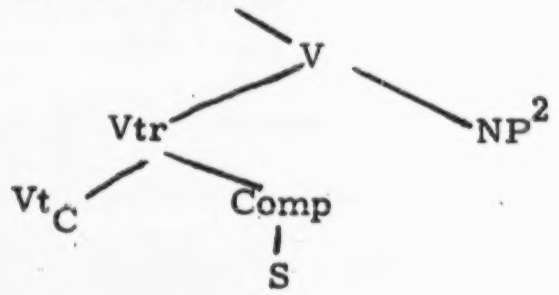
2. Complements come from other sentences, parts of which are embedded right after the complement verb.

   A condition for the embedding is that the NP^2 of the consumer be the same as the subject NP of the source.

   We elected Bill.
Bill is chairman. } ⟹ We elected Bill chairman.

   The embedded complement is considered part of the verb structure. Hence in the branching diagram of a sentence containing a comp verb, both the Vt_C and Comp derive from Vtr.

   Because the Comp comes from another sentence, the symbol S is used to indicate its source.



3. Embedding complements right after the verb produces ungrammatical sentences. The complement must be moved to a position beyond the NP^2 to produce a grammatical sentence.

*We elected chairman Bill ⟹ We elected Bill chairman.
*We found sleeping the boy ⟹ We found the boy sleeping.

T_{comp}

$$\begin{array}{l} \ldots Vt_C + Comp + NP^2 \\ \ldots Vt_C + NP^2 + Comp \ldots \end{array}$$

4. Finally, we have identified the kind of source sentences complements come from:

Those which get their complements from source sentences with a main verb Be.

1) Verbs like elect take complements which are noun phrases.

NP
They elected Joe leader. from They elected (comp) Joe.
Joe is leader.

2) Verbs like consider take complements which are either noun phrases or adjectives.

NP
They made him dogcatcher. from They made (comp) him.
He is dogcatcher.

Adj.
They made him happy. from They made (comp) him.
He is happy.

3) A few verbs, like want, require to be with the Pr when it is embedded as a complement. In these the tense of the verb in the source is replaced by to. (tns + Be ⟹ to + Be)

She wants her brother to be president

from She wants (comp) her brother
Her brother is president.

4) A very few will take only complements which are adjectives.

Adj.
They painted their house purple.

from They painted (comp) their house
Their house is purple.

Those which get their complements from sentences with main verbs other than Be.

1) Verbs like discover take as complements verbs in their ing form. This means, of course, that the verb in the source sentence must include be + ing.

They found the child crying.

from They found (comp) the child.
The child is crying.

2) Verbs like teach take as complements to + verb of the source sentence.

They taught us to tie flies.

from: They taught (comp) us.
We tie flies.

3) Verbs like make take as complement the to + verb form but the to does not appear.

We made him return the book.

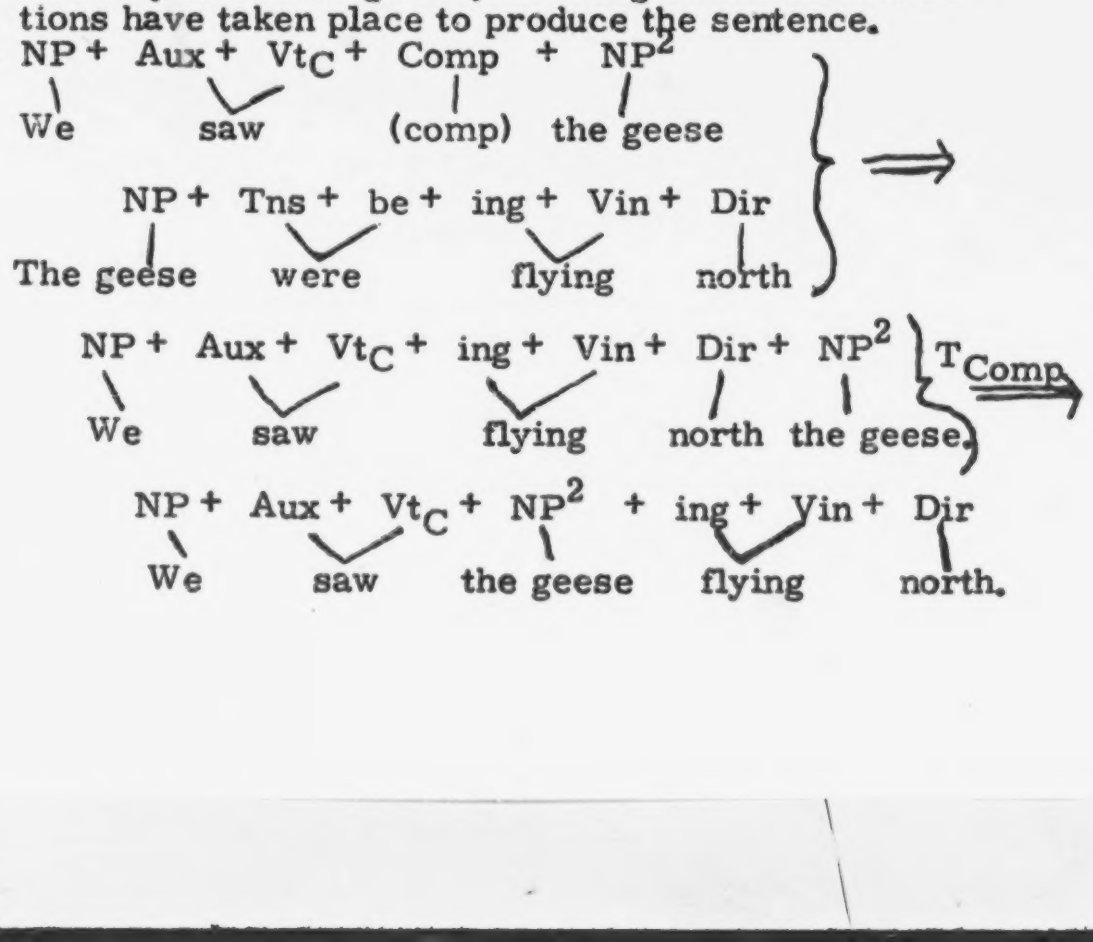
from We made (comp) him.
He returned the book.

Exercise: A. Write two sentences which illustrate each kind of complement verb, and for each write the Source sentence and the Consumer.

Example: We saw the geese flying north.
from: Consumer: We saw (comp) the geese.
Source: The geese were flying north.

B. Select three of the sentences you have written to write symbol strings for, showing what transformations have taken place to produce the sentence.

Example:


NP + Aux + Vt_C + Comp + NP²
We saw (comp) the geese
NP + Tns + be + ing + Vin + Dir
The geese were flying north
NP + Aux + Vt_C + ing + Vin + Dir + NP²
We saw flying north the geese.
T Comp
NP + Aux + Vt_C + NP² + ing + Vin + Dir
We saw the geese flying north.

REVIEW OF EMBEDDING

AND CONJUNCTIVE TRANSFORMATIONS

Many of the sentences of our language are the result of embedding one kernel sentence in another. We say a Source sentence is embedded in a Consumer sentence. By this time you are familiar with several kinds of embedding. Before you go on to another kind, review what you know about the following:

Relative Clauses. This is the kind of embedding where a source and a consumer have NP's which are identical. The source sentence is embedded immediately following the NP of the consumer by means of a wh-attachment (who, which, or that). There are several kinds of relative embedding. You are particularly familiar with the kind which embeds source sentence whose form is NP + Aux + Be + Pr.

Embedding the Predicate. This involves embedding a source sentence in which the main verb is Be (NP + Aux + Be + Pr) into another sentence.

Example: The man was selling pencils
The man is blind } ⟹ The man who is blind was selling pencils.

What further transformations can operate upon this sentence?

Think of some other example of this kind of embedding.

What are the necessary conditions for the two sentences in the transformation?

Remember: 1) This kind of embedding accounts for adjectives and locative adverbs attached to nouns and for noun appositives. Examples of each are found underlined in the following:

The tall building blocked the view.
The building on the corner has stood for years.
The building, a skyscraper, has many windows.
The large gentlemen at the desk designed the building, a skyscraper.

2) The subject NP of the source sentence must be identical to an NP in the consumer.

3) After the source sentence has been embedded, all except the predicate may be deleted:

The man who is blind was selling pencils.
The blind man was selling pencils.

Although you are most familiar with the kind of embedding in which the source sentence contains Be + Pr, such as those above, you should have no difficulty with embedding sentences with other forms. For instance, The man is painting our house, can be embedded in The man belongs to a union, to give

The man who is painting our house belongs to a union.

What is there about the two sentences which makes it possible to embed one in the other? What has happened to the man in the source sentence when it is embedded? Is it possible to delete items from the embedded source in this sentence? Think of examples of other sentences in which there are embedded sources with different kinds of verbs.

Embedding a possessive clause. This involves embedding a source sentence in which the main verb is Have ($NP + Aux + Have + NP^2$) into another sentence.

Example: The house slid down the cliff.
The man has a house. } ⟹ The house which the man has slid down the cliff.

What other transformations can now operate upon this sentence?

Think of some other examples of this kind of embedding.

What are the necessary conditions for the two sentences involved?

Which NP in the source must be identical to an NP of the consumer?

Remember: 1) This kind of embedding accounts for nouns which show possession.

The boy's hat flew out the window.
Joe stepped on the cat's tail.
He saw the children's play.

2) The NP following have in the source sentence must be identical to an NP in the consumer.

3) After the source has been embedded, all except the subject NP and verb of the source can be deleted. NP + have ⟹ NP's

The house which the man has slid down the cliff.
The man's house slid down the cliff.

Conjunctive transformations. This kind of Transformation joins two sentences which are identical in every element except one. The unlike element of one sentence is then embedded immediately after the unlike element of the other sentence, and joined to it by means of a conjunction.

Examples: The Iliad was written by Homer.
The Odyssey was written by Homer. } ⟹ The Iliad and The Odyssey were written by Homer.

The McQueens visited Rome.
The McQueens visited Paris. } ⟹ The McQueens visited Rome and Paris.

Think of some other examples of this kind of process.

What are the necessary conditions for the two sentences which are joined?

Remember: 1) This kind of addition accounts for a number of the compound elements we find in so many of our sentences.

Joe studied hard and passed the exam.
The fly crawled up and down.
The Capulets and the Montagues were involved in a feud.

2) The conjunction can take place only when the unlike elements which are joined derive from the same point in the branching diagram. We can join two Vtr's or two NP^{2}'s, etc.

Complement embedding. As you know, many sentences contain complements — elements added to some part of the kernel, often the verb, to make it more complete. Usually these complements are the result of embedding part of a source sentence, which may have been changed in some way. There are many kinds of complement embedding. Perhaps you will recognize the following:

Examples: We elected Johnson.
Johnson was president. } ⇒ We elected Johnson president.

I wanted (comp.) him
He goes. } ⇒ I wanted him to go.

We painted (comp) the barn
The barn is red. } ⇒ We painted the barn red.

Think of some other examples of sentences with complements and try to account for their source.

Review exercises:

A. Embed the second sentence of each pair (the source) in the first sentence (the consumer.) Where it is possible to delete part of the embedded sentence do so. Remember that this process of deletion is also a transformation. In some cases there is more than one source.

1. The jaguar drops from trees.
   The jaguar is a cat.

2. The child is pouting in the corner.
   The child is stubborn.

3. The pitcher stood on the mantle.
   The pitcher is expensive.

4. The dog bared his teeth.
   The dog is under the table.

5. Some tourists are trampling the flowers.
   The tourists are curious.

6. Shadows stretched across the campus.
   Shadows are long.

7. The books will help you.
   The books are on the shelf.
   The shelf is long.

8. The costumes will be used in the play.
   The costumes are elaborate.

9. The lifeguard saved the child.
   The lifeguard is alert.
   The child is small.

10. The doctor set the bone.
    The doctor is a specialist.
    The specialist is at the hospital.

B. Reduce the following sentences to their underlying sentence strings.

Example: The blue Jaguar stopped here.

The + Jaguar + sing. + past + stop + here.

The + Jaguar + sing. + pres + Be + blue.

1. The man, a doctor, administered oxygen.
2. He made a brilliant report.
3. The paper on top is about genetics.
4. The students wrote the underlying sentences.
5. A crazy driver was weaving across the road.
6. He is looking for a needle in a haystack.
7. We have a long assignment, a term paper.
8. The giant plane circled the icy runway.
9. The child in the boat is a good swimmer.
10. The tree on the corner fell on the black car.
11. John's machine is spectacular.

12. Wilfred rang the superintendent's bell.

13. The boys' rafts were overturned.

14. They listened to the guide's advice.

15. She gave him John's address.

C. Perform conjunctive transformations on the following sentences.

1. Mark Twain is an American author.
   Washington Irving is an American author.

2. Harris sat in his office.
   Harris smoked.

3. The roses should be pruned.
   The roses should be fertilized.

4. The raccoon has been coming all summer.
   The raccoon has been going all summer.

5. I have finished the book.
   I will return the book.

6. The British fought on the beaches.
   The British fought in the towns.

7. Bombs dropped on Dresden.
   Bombs dropped on Hamburg.

8. The boy is quiet.
   The boy is a cripple.

9. The fools put the bananas in the refrigerator.
   The fools put the milk in the oven.

10. The play is excellent.
    The play is in Chicago.

D. Reduce the following sentences to their underlying sentence strings.

1. He will lecture at the college on April 6 and at the University on April 13.

2. The speaker will discuss language and linguistics.

3. The storm levelled the oaks and poplars.

4. The cat moaned and groaned in his sleep.

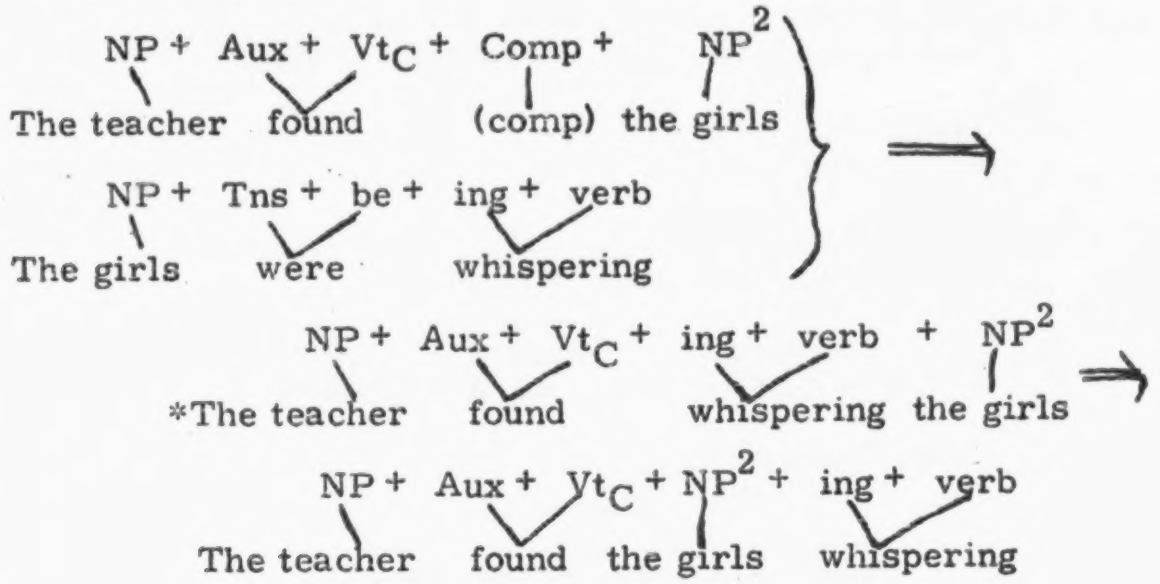
5. The students must take math and science.

6. Nell has finished the assignment and turned the paper in.

What has to be done to make this sentence grammatical?

Exercise 10: Transform the following pairs of sentences by embedding the ing + verb of the source into the consumer. Remember that it takes two steps to produce a grammatical sentence. Write symbol strings for each sentence.

Example:


NP + Aux + Vt$_C$ + Comp + NP^2
The teacher found (comp) the girls
NP + Tns + be + ing + verb
The girls were whispering
NP + Aux + Vt$_C$ + ing + verb + NP^2
*The teacher found whispering the girls
NP + Aux + Vt$_C$ + NP^2 + ing + verb
The teacher found the girls whispering

1. The police caught (comp) the man.
   The man was picking the lock.

2. A watchman heard (comp) the phone.
   The phone was ringing.

3. The dogs saw (comp) us.
   We were coming.

4. The tourists noticed (comp) the lines.
   The lines were forming.

5. Some boys watched (comp) the river.
   The river was rising.

Exercise 11: Write the underlying sentence strings for the following transforms. Use the linguistic strings of symbols and show how the underlying strings go through two transformations to produce the final sentence.

Example: I heard the rats gnawing the woodwork.

from: NP + Aux + Vt_C + Comp + NP^2

I heard (comp) the rats

NP + Tns + be + ing + Vtr + NP

The rats were gnawing the woodwork ⟹

NP + Aux + Vt_C + ing + Verb + . . .

*I heard gnawing the woodwork

NP^2

the rats ⟹

NP + Aux + Vt_C + NP^2 + ing + Verb . . .

I heard the rats gnawing the woodwork.

A. 1. The chipmunk found the squirrel stealing nuts.
2. He saw the ants crawling on the table.
3. The matron heard the child crying.
4. The tyrant discovered the prisoner escaping.
5. The Indians surprised the farmers plowing.
6. The principal caught the boys sneaking out.

B. 1. The manager considered Fred a troublemaker.
2. The governor named Joe a representative.
3. Miss Derry noticed her taking notes.
4. The dramamine made Cynthia sleepy.
5. We could imagine the team pushing the bus.

Part V

Minute Review

Many transitive verbs take complements.
Complements come from embedded source sentences.
Many come from a source sentence with the form

NP + Aux + Be + Pr.

Examples: I considered the play hilarious.
(The play was hilarious.)

Mother named the baby Clarence.
(The baby is Clarence.)

Mr. Mortimer found us to be reliable.
(We are reliable.)

Sally dyed her hair red.
(Her hair was red.)

strings derived by the phrase structure rules contain a place which can be filled or completed by an element from another sentence. We have called this the pla ce of a complement, or Comp. We have found that certain transitive verbs, for instance, can take complements. But other elements of the sentence can also have complements. The NP^1 in the sentences above is such an element. It is an indefinite word which occupies the place of the subject but obviously needs something to complete it--to give it meaning. The place of the subject NP in these sentences is held, then, by an indefinite It + Comp, a special kind of NP found in the subject position in some kernel sentences. We can describe the form of these sentences in this way:

It + Comp + Aux + Be + Adj

The embedding--In the examples above the place of Comp is filled by an entire source sentence, which is introduced by that. Because these source sentences are introduced by that before they are embedded they are often called that-clauses. Notice the position of the Comp. If the that-clause is placed in the comp position, the resulting sentence is not grammatical.

*It that I am happy is true.

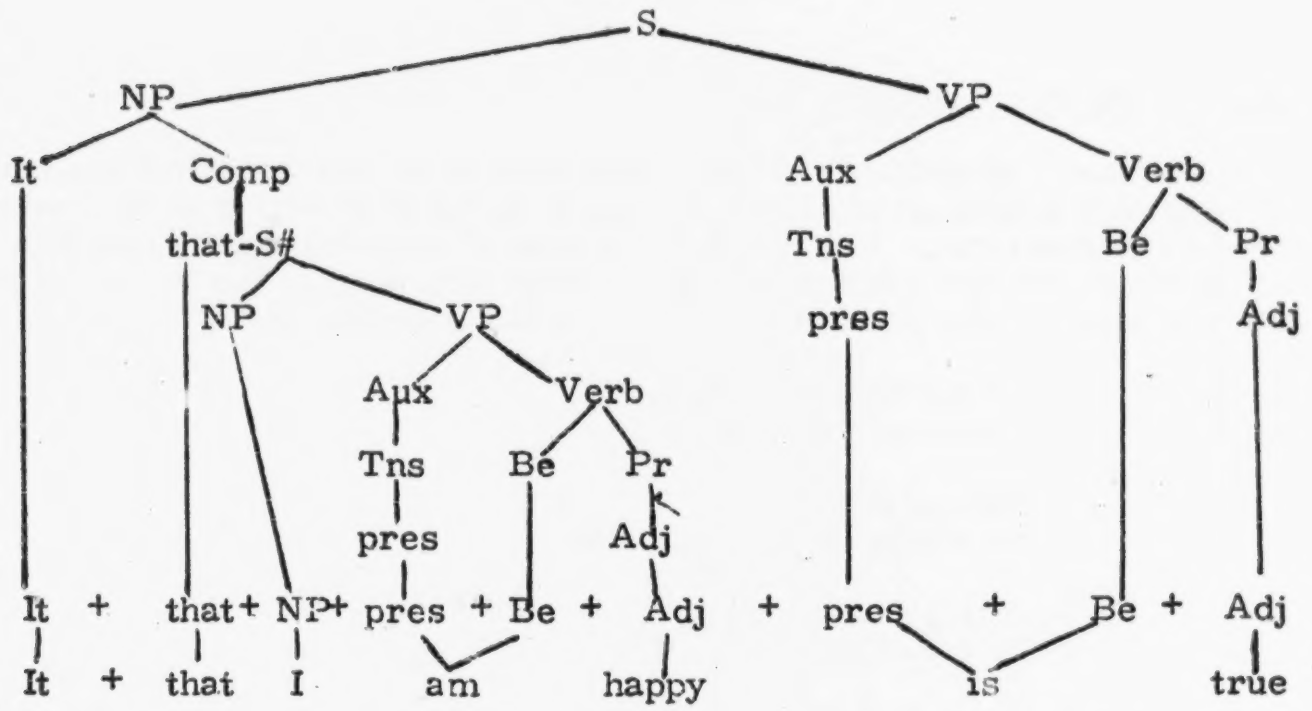
from It + Comp + is true.
I am happy.

What can be done to produce a grammatical sentence? Are the following grammatical?

That I am happy is true.
It is true that I am happy.

What was done to the ungrammatical sentence to produce each of these? Perhaps we can agree that in cases like these we can either eliminate it, leaving only the that-clause in the position of the NP^1, or we can move the entire that-clause to the end of the sentence. Since it is possible for these that-clauses to fill the position held by an NP, they are sometimes called noun-clauses. From now on we will call them that-noun-clauses to distinguish them from other kinds of noun clauses which we may want to talk about later. Then, It + Comp + Be + Adj describes one kind of string into which a that-noun clause can be embedded.

You might be interested in seeing what a diagram of this kind of sentence with its embedded noun clause looks like. It is not always easy to make diagrams of sentences which contain embeddings, but this one should present no difficulties.



#that-S is the symbol for the embedded sentence introduced by that

Abstract Adjectives--You know, of course, that the Adj after Be in the consumer sentence is a predicate adjective. Are there any restrictions on the kind of adjective which can occur in sentences of this kind, following a complement noun-clause? To answer this question let's experiment with the following. Each of them has the form of It + Aux + Be + Adj. Will a noun-clause complement work in each? Try to embed We have finished. (or any other source sentence you like) as a complement after It. Then delete It to see if you can get a grammatical sentence.

1. It is obvious.
2. It is mysterious.
3. It is late.
4. It is certain.
5. It is true.
6. It is understandable.
7. It is red.
8. It is fortunate.
9. It is pleasant.
10. It is large.

Which of the sentences permitted the embedding of the that-noun clause? List the adjectives from those sentences. These adjectives are a special class of adjectives which can occur after a that-noun clause complement. They are called abstract adjectives. (Adj_a) Not all adjectives will work in such situations. We can test them by trying them opposite a that-noun-clause in a frame like the following:

That he will go is _____.

Adjectives which will not fit in this frame will be classified as concrete adjective (Adj_c). Now we can say that one kind of string into which a that-clause can be embedded as a complement would have this form:

$$It + Comp + Aux + Be + Adj_a$$

Other kinds of consumers

Are there other kinds of consumer sentences which permit the embedding of a that-noun clause? The ones we have looked at so far have predicate adjectives. Could the same kind of embedding take place in consumers with NP's for predicates? For instance, in the following pairs can the source sentences be embedded in the consumers?

NP
It (Comp) is an outrage.
We will have a test.

NP
It (Comp) is a fact.
Some snakes are poisonous.

NP
It (Comp) was a surprise.
He won the election.

NP
It (Comp) is a possibility.
I will flunk the test.

If this embedding takes place it will result in

*It that we will have a test is an outrage.
*It that some snakes are poisonous is a fact.
*It that he won the election was a surprise.
*It that I will flunk the test is a possibility.

To make these grammatical, what must be done? Are the following satisfactory?

It is an outrage that I will have a test.
That we will have a test is an outrage.

It is a fact that some snakes are poisonous.
That some snakes are poisonous is a fact.

It was a surprise that he won the election.
That he won the election was a surprise.

It is a possibility that I will flunk the test.
That I will flunk the test is a possibility.

Abstract Nouns--That-noun clauses can be embedded in sentences which have the form It + Comp + Aux + Be + Adj if the adjective is an abstract adjective. Apparently they can also be embedded in sentences of the form It + Comp + Aux + Be + NP. However, before we can be specific about the kind of kernels which underlie such sentences, we need to know if there are the same kind of restrictions on the predicate NP as there were on the predicate Adj.

Let's experiment with the following sentences. Each of them has the form It + Aux + Be + NP. We don't know if the sentences contain It + Comp or some other kind of it until we try to place a comp in them. Try to embed He will be leader (or any sentence you like) after It. Then delete It to see if you get a grammatical sentence.

1. It is a unicorn.
2. It is a rule.
3. It is a potato.
4. It is the blood.
5. It is his ears.
6. It is a certainty.
7. It is a possibility.
8. It is an evergreen.
9. It is an army.
10. It is a fact.

Which of the sentences permitted the embedding of the that-noun clause? List the Predicate NP's from those sentences in one column and the Predicate NP's from the sentences which would not permit the embedding in another column.

The Predicate NP's in the sentences which permitted the noun clause contain a special kind of noun. Those nouns are called abstract nouns which we may symbolize as (N_a). We can test them by seeing if they will fit opposite a that-noun clause in a frame like the following:

That he will go is a _____.

Notice that they are all count nouns. Nouns which will not fit into this frame we will classify as concrete nouns (N_c).

Exercise: Make a list of all the abstract adjectives you can think of. Test them by trying to place them in the following frame:

That he will be there is _____.

B. Make a list of all the abstract nouns you can think of. Test them by trying to place them in the following frame:

That they won the tournament is _____.

We can conclude that one restriction on the kind of predicate NP in the underlying consumer is that it must be an abstract noun. Are there any other restrictions? Remember that an NP includes not only a noun but also a determiner.

It that I am happy is the fact

is the result of embedding I am happy in It is the fact. If the It is deleted we get

*That I am happy is the fact.

On the other hand, if we move the clause we get

*It is the fact that I am happy.

Most people would find these sentences ungrammatical. Why? The answer can be found in the difference between

It is the fact.
It is a fact.

In one the NP of the predicate has an indefinite article (a). The other has a definite article (the). The embedding can take place only in those with the indefinite article. We must indicate this restriction by writing the NP of the predicate as a(n) + N_a + sing. The consumer can be symbolized, therefore, as

It + Comp + Aux + Be + a(n) + N_a + sing.

Exercise 2: Write the underlying kernels from which the following have derived.

Example: That flouride is harmless is an opinion.

It + Comp is an opinion.
Flouride is harmless.

1. That he came from Kansas was strange.
2. It is obvious that he weighs too much.
3. It is a catastrophe that the house is sinking.
4. That he will finish is certain.
5. That the cat is Siamese is an assumption.
6. That she was on time was a surprise.
7. That the man is an expert is true.
8. It was nice that he could make the trip.

Specifying the transformation

In this section we want to specify the transformation we have been talking about. Specify is a word you may not be too familiar with. It means to describe specifically. This is of course what we are doing when we write symbol strings and rules for the transformations which give us the sentences of our language.

To be as specific as we can in the rule which describes sentences with that-noun clauses we will want to put together all the information we have discovered in this unit. This information can be summarized in the following points:

1. Kernel sentences can be embedded in the position of complement in other kernels which have the form

   It + Comp + Aux + Be + Adj_a (Adj_a means abstract adjective)

2. They can also be embedded in kernels which have the form

   It + Comp + Aux + Be + a(n) + N_a + sing (N_a stands for abstract noun. The NP must include both N_a and the indefinite article a(n)

3. The embedded sentence is introduced by that. (that-S)

4. The embedding results in an ungrammatical sentence, such as

   *It <u>that he bores me</u> is a fact.

5. It is then necessary either to move the noun clause to the end of the sentence or to delete the <u>It</u>.

   It is a fact that he bores me.
   That he bores me is a fact.

We can combine the information in items 1 and 2 above by saying that the form of the consumer must be

$$\text{It} + \text{Comp} + \text{Aux} + \text{Be} + \begin{Bmatrix} Adj_a \\ a(n) + N_a + \text{sing} \end{Bmatrix}$$

There are no apparent restrictions on the kind of sentence which can be embedded. We can symbolize it simply as S. The rule can then be written:

$$\begin{matrix} \text{It} + \text{Comp} + \text{Aux} + \text{Be} + \begin{Bmatrix} Adj_a \\ a(n) + N_a + \text{sing} \end{Bmatrix} \\ S \end{matrix} \Longrightarrow$$

$$\text{It} + \text{that-S} + \text{Aux} + \text{Be} + \begin{Bmatrix} Adj_a \\ a(n) + N_a + \text{sing} \end{Bmatrix}$$

One of two transformations is then necessary to make the resulting sentence grammatical. One involves deleting the <u>It</u>.

$$T_{\text{delete it}} \quad \text{It} + \text{that-S} + \text{Aux} + \text{Be} + \begin{Bmatrix} Adj_a \\ a(n) + N_a + \text{sing} \end{Bmatrix} \Longrightarrow$$

$$\text{that-S} + \text{Aux} + \text{Be} + \begin{Bmatrix} Adj_a \\ a(n) + N_a + \text{sing} \end{Bmatrix}$$

The other transformation which is possible is to move the that-clause to the end of the sentence.

$$T_{\text{that-S}} \quad \text{It} + \text{that-S} + \text{Aux} + \text{Be} + \begin{Bmatrix} \text{Adj}_a \\ \text{a(n)} + \text{N}_a + \text{sing} \end{Bmatrix} \Longrightarrow$$

$$\text{It} + \text{Aux} + \text{Be} + \begin{Bmatrix} \text{Adj}_a \\ \text{a(n)} + \text{N}_a + \text{sing} \end{Bmatrix} + \text{that-S}$$

Exercise: Write the underlying kernels and symbol strings for the following and indicate the transformation which produced the sentences.

Example: It was obvious that he was lying.

$$\left.\begin{array}{l} \text{It} + \text{Comp} + \text{Aux} + \text{Be} + \text{Adj}_a \\ \text{It} + \text{Comp} + \text{was} + \text{obvious} \\ \text{NP} + \text{past} + \text{be} + \text{ing} + \text{V}_{in} \\ \text{He} + \text{was} + \text{lying} \end{array}\right\} \Longrightarrow$$

$$\begin{array}{l} \text{It} + \text{Comp} + \text{past} + \text{be} + \text{Adj}_a \\ \text{It that he was lying} \quad \text{was} \quad \text{obvious} \end{array} \Longrightarrow$$

$$T_{\text{that-S}} \quad \begin{array}{l} \text{It} + \text{past} + \text{Be} + \text{Adj}_a + \text{Comp} \\ \text{It} \quad \text{was} \quad \text{obvious} \quad \text{that he was lying.} \end{array}$$

1. That he will come is doubtful.
2. It is a fact that he often cheats.
3. It is certain that we will go to Europe.
4. That you think so is funny.

<u>That-noun clauses and transitive verbs requiring animate objects.</u>

A that-noun clause is a source sentence which has been embedded as a complement in the noun phrase of a consumer sentence.

We have discovered that such clauses can be embedded in at least two kinds of consumers. Are there other kinds? Look at the following sentences.

1. It surprised me.
2. It terrified the woman.
3. It astonished the child.
4. It pleased the monkey.
5. It frightened the dog.
6. It delighted the baby.

What is the first question you want to ask about these sentences? You probably want to know what it is. It might be the personal pronoun it which we use when we don't want to repeat a noun. For instance we might say "I saw the movie. It surprised me." Obviously in this case it is a substitution for the movie. But It might also be the indefinite NP which we have come across in the sentences with that-clauses--the one that requires something to complete it. We can find out by experimenting to see if a that-noun clause can serve as a complement in such sentences. Work with the pairs of sentences in the following groups to see if the second sentence in each pair can be embedded as a that-noun clause in the first.

A.
1. It surprised me.
   I could go.
2. It astonished the child.
   The top was spinning.
3. It terrified the woman.
   She was in the dark.
4. It pleased the monkey.
   He found the bananas.
5. It frightened the dog.
   The stranger yelled at him.
6. It delighted the baby.
   He could swing.

B.
1. It broke the window.
   I could go.
2. It scratched the floor.
   The top was spinning.
3. It filled the room.
   She was in the dark.
4. It contained money.
   He found the bananas.
5. It increased the noise.
   The stranger yelled at him.
6. It caused damage.
   He could swing.

Were you able to perform noun clause embeddings with the sentences of both groups?

Why can we say — That I could go surprised me.

But not — That I could go broke the window.

The source sentences are the same but the consumers are different. What conclusions can you draw? Can you identify the kind of consumer sentences above which accepted a noun clause embedded as a complement in the NP? The sentences which accepted the that-noun clauses have a special kind of verb. They are all transitive verbs and, therefore, are followed by NP's. What kind of nouns do you find following the verbs in Group A above? (me, the woman, the child, the monkey, the dog, the baby)? Remember that a test for animate nouns is whether they can follow such verbs as those in Group A. There, verbs require animate nouns as their object NP's. We can label them Vt_{an} because they are transitive verbs which require animate objects. The basic form of the consumer can, therefore, be described in this way:

$$It + Comp + Aux + Vt_{an} + T + N_{an} + N^{O}$$

When noun clauses are embedded as complements of It in sentences of this kind, the resulting sentences are ungrammatical.

*It that I could go surprised me.

What possible transformations would make this sentence grammatical?

Summary: We have found three kinds of sentences which will accept that-noun clauses as complement of the indefinite subject It.

1. Sentences with the form

   It + Comp + Aux + Be + Adj_a (abstract adjective)

2. Sentences with the form

   It + Comp + Aux + Be + a(n) + N_a + sing (abstract nouns with a non-definite determiner)

3. Sentences with the form

   It + Comp + Aux + Vt_{an} + T + N_{an} + N^o

In every case the embedding resulted in an ungrammatical sentence which required either the deletion of It or the moving of the noun clause to the end of the sentence.

It that he was here surprised me ⟹

That he was here surprised me.

or It surprised me that he was here.

Exercise: Write symbol strings for the six pairs of sentences in Group A, page 9, and for each of the transformed sentences you wrote for them. Remember that after the that-S has been embedded one of two transformations is required to make the sentence grammatical.

Example:

It + (Comp) + Aux + Vt_{an} + T + N_{an} + sing
It comp infuriated the child

NP + Aux + V_{tr} + NP
He broke the toy

⟹

It + that + S + Aux + Vt_{an} + T + N_{an} + sing
It that he broke the toy infuriated the child.

T_{it} delete

that + S + Aux + Vt_{an} + T + N_{an} + sing
That he broke the toy infuriated the child.

Some projects for curious students: This unit is concerned with only a few of the possible that-noun clauses. And we have discussed only a few of the interesting relations that exist with abstract nouns, abstract adjectives, and transitive-animate verbs. Some of you may want to select one of the following questions to investigate on your own and to report on.

1. We don't say It is the fact that he will go.
That he will go is the fact.

But we do say The fact is that he will go. (not A fact is that he will go.)
The point is that I like Joe. (not A point is that I like Joe.)

What kind of consumer sentence do you think might underlie sentences of this kind? And what restrictions would you need to put on them?

2. In sentences of the form

NP^1 + Aux + Be + Adj

if there is an abstract noun as NP^1 what kind of adjectives occur in the predicate adjective position?

3. Think of as many examples as you can of sentences which have that-clauses. Try to decide if they are that-noun clauses or simply relative clauses as in

I saw the building that burned.

from I saw the building.
The building burned.

If you think they are noun clauses try to discover what the underlying sentences might be and how they were embedded.

4. You have found that that-noun clauses may be embedded in the NP as a complement of It when 1) the verb of the sentence is Be and the Pr is an abstract noun or abstract adjective; and also when 2) the verb is a Vt_{an} requiring an animate object.

Try to find if that-noun clauses can be embedded in the NP as a complement of It, with any other kinds of verbs.

THE IMPERATIVE

We have all agreed that every English sentence has two essential parts, a fact that is described by the phrase structure rule S → NP + VP. This rule also indicates that the NP comes before the VP. By definition the phrase structure rules describe the base or kernel sentences of our language. Transformations describe ways in which the kernel sentences can change to become other kinds of sentences. When we find a sentence that doesn't seem to conform to the phrase structure rules, we have to decide if it is simpler to try to write a phrase structure rule to describe it, or if it is simpler to explain it by a transformation rule. It is important to remember also that the rules should show the ways in which sentences are related. For instance, the following sentence

Is Bob in the library?

does not conform to the rule S → NP + VP because obviously the verb phrase comes first. It was simpler to show that this sentence was a transformation of

Bob is in the library.

than to write a separate phrase structure rule for it. And, equally important, the transformation shows that the two sentences are related in a particular way. They share the same elements, but arrange them in a different order.

Do the following sentences all have the essential parts described by Phrase Structure Rule (1)? If not, which sentences seem to lack something?

1. The man is outside.
2. Go home.
3. Tom helped the lady.
4. Eat your vegetables.
5. The boys went home.
6. Help yourself.
7. Put the pencil on the desk.

Would you agree that sentences 2, 4, 6, and 7 do not have an NP? Would you accept them as sentences? If so, how can we explain the fact that they do not have an NP?

Do these sentences have anything in common besides the lack of an NP? Such sentences--ones which give commands--are called <u>imperative</u> sentences. And though they seem to lack an essential part we can all understand what they mean. What would you say the subject NP is? People have often said that such sentences have an "understood" subject, by which they mean that we all understand what subject is intended, though it doesn't exist in the sentences in this form. But is there some way to <u>prove</u> what the NP is and then to show why it doesn't appear in the sentence?

To do so, look first at the following sentences:

The boy put the pencil on the desk himself.
The girl put the pencil on the desk herself.
He put the pencil on the desk himself.
We put the pencil on the desk ourselves.
The people put the pencils on the desk themselves.

What is the relation of the underlined words in each sentence? The second underlined word in each case is said to be the reflexive form of a pronoun. It is related to the NP underlined earlier in the sentence.

The boy. . . . . himself.
The girl . . . . . herself.
He. . . . . himself.
We. . . . . ourselves.
The people . . . . . themselves.

Exercise 1: In order to show how reflexive pronouns relate to NP's, copy the list of words from column A. After each one write the reflexive pronoun from column B which is related to it.

A	B
The boy	myself
The girl	ourselves
The people	herself
You	themselves
I	yourself
He	himself
She	
They	
We	

What reflexive pronoun would you add at the end of sentence number 7. on the first page?

Put the pencil on the desk _____.

What is yourself related to? In each of the other sentences the reflexive pronouns related to the subject NP. If yourself relates to you, then the fact that yourself is the only reflexive pronoun which fits the blank in the imperative sentence indicates that the missing subject NP must be you. We can think of it as existing in the underlying base sentence but not appearing in the imperative form. It has been deleted. What NP's have been deleted from sentences 2, 4, and 6 on page 1? What proof can you offer for your answer?

We have, thus, discovered that the subject NP which has been deleted from a kernel sentence to form an imperative is you, in every case.

Does this mean that if you is deleted from any sentence in which it occurs that the result will be a grammatical imperative? What would be the result of deleting you from the following?

1. You are having a good time.
2. You looked weary.
3. You have done well.

Are these sentences grammatical?

4. Are having a good time.
5. Looked weary.
6. Have done well.

What can you conclude about such deletions? It appears that imperatives must be derived from underlying kernels with a particular kind of VP as well as a particular kind of NP. Let's see if we can pin down exactly what kind of VP the kernel must have if an imperative is to be derived from it. We will begin by reviewing some forms of the negative.

Exercise 2: Isn't is the negative form of is. (It is really a contraction of is + not.) Copy the words from column A below and after each write the negative form from column B which corresponds to it.

A	B
is	wouldn't
can	can't
will	mustn't
must	shouldn't
should	haven't
would	won't
have	isn't

What did you decide was the negative form of will?

Negative forms are often used to form questions at the end of a sentence. For instance

He is here, isn't he?

Such questions are called tag questions. What would be the tag question for The dog is sick? For The dog has come back? Exactly how are these tag questions formed?

Exercise 3: Copy the following sentences and write symbol strings for them. Then add tag questions to each one and try to discover the answer to these two questions.

a. How much of the sentence is repeated in the tag question?
b. Is anything else ever added when the tag question is being formed?

1. He should go.
2. He shouldn't go.
3. He would go.
4. He wouldn't go.
5. You will be there.
6. You won't be there.
7. He has been going.
8. He hasn't been going.
9. We can come to the party.
10. We can't come to the party.
11. They are coming.
12. They aren't coming.

You may have discovered by now that tag questions include only the NP and tns + either M, have, or be, and sometimes not (n't). The tag questions for affirmative sentences are in the negative and those for negative sentences are in the affirmative. Now look at some imperatives and try to decide how their tag questions are formed.

Exercise 4: Write the tag questions for the following sentences and then answer the questions below them.

Get out of here.
Move over.
Put your pencil on the desk.
Go home.
Open the window.

1. What have you discovered is the underlying NP of imperative sentences of this kind?

2. Did you repeat this NP in the tag questions you just wrote?

3. Does a tns + auxiliary exist in the imperative sentences to which you added tag questions?

4. Do the tag questions have a tns and auxiliary? What are they in every case? (Remember that won't is actually will + not.)

5. If pres + will occurs in the tag questions of imperatives like those above, what can you conclude about the underlying kernel of this kind of sentence?

We have now discovered these three important facts about imperative sentences:

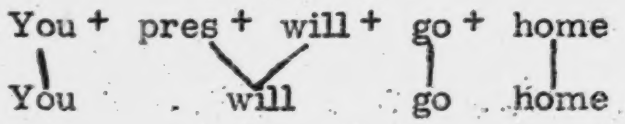
1. Imperatives are derived by deleting certain parts of kernel sentences. These parts are repeated in tag questions. (Sometimes not is also added. This varies with different speakers.)

2. The subject NP of the kernels underlying the imperatives is always you.

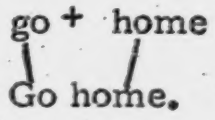
3. The kernels underlying these imperatives contain pres + will.

Therefore we can say that imperatives can be formed from kernels which contain you as the subject NP and which also have pres + will.

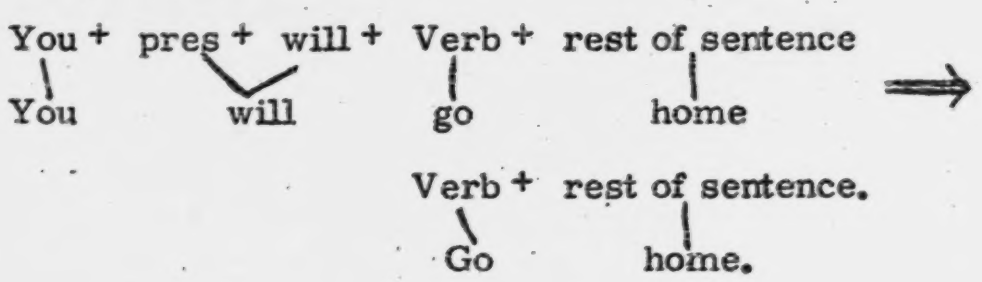
What sort of rules can be written to explain how a sentence like



can be transformed to



At first it seems very simple. Why not simply say that the subject NP, the tense, and the modal will are deleted?



This kind of rule would explain one kind of imperative, but we must ask if there are other kinds and test to see if the rule is adequate for them.

If the negative sentence related to 1. He went is

2. He did not go.

what are the negative sentences related to sentences 3 - 7 below?

3. You must go.
4. The man broke his nose.
5. We should go.
6. We will go to the beach.
7. Go home.

What kind of sentence is 7? Its negative is Do not go home. (or Don't go home.) This is a negative and also an imperative, and we notice immediately that it contains two elements which were not found in the positive imperative Go home. What are they? The not can be explained as the result of the negative transformation. But where has the do come from? It didn't exist in the regular imperative, but for some reason has been added to the negative form of the imperative. What situation can you think of which requires the addition of do? This addition has been called the do + support transformation. What kinds of sentences does this situation occur in? To refresh your memory do the following exercise.

Exercise 5: Write the underlying kernels and symbol strings for the following sentences. Perform the negative or question (T_Q) transformations called for and show how the do-support transformation is necessary.

Example: Do you have a dime?

Kernel: Q + NP + pres + Verb + NP^2

Q You have a dime.

$\xrightarrow{T_Q}$

pres + NP + Verb + NP^2

* ? you have a dime.

$\xrightarrow{T_{do\ support}}$

pres + do + NP + Verb + NP^2

Do you have a dime?

Example: He didn't win the debate.

Kernel: Neg + NP + past + Verb + NP^2

Neg + He won the debate.

$\xrightarrow{T_{Neg}}$

NP + past + not + Verb + NP^2

*He ? not win the debate

$\xrightarrow{T_{do\ support}}$

NP + past + do + not + Verb + NP^2

He did not win the debate.

(didn't)

1. Did Joe paint the picture?
2. Does the milkman come tomorrow?
3. The milkman doesn't come tomorrow.
4. Bill didn't find the watch.
5. Do they want amateurs in the play?
6. They don't want professionals.

The sentences in the exercise you have just done illustrate how it becomes necessary to add do after the negative and question transformation if tns is left unattached. Could the do in the negative imperative be explained in the same way?

We have already discovered that the kernel sentence string underlying all imperatives is You + pres + will + Verb + ...

You will go home.

But in the kernel underlying Don't go home there must have been a negative, in which case the string would have looked like this:

Neg + you + pres + will + Verb + ... $\xrightarrow{T_{Neg}}$

Neg + you will go home

The symbol Neg indicates that the negative transformation must operate.

You + pres + will + not + Verb + ...

You will not go home

But we discover that in the negative do has also been added and appears at the beginning of the sentence:

Don't go home.

Let us assume, on the basis of what we know about do-support, that the do has been added because tense has been moved to the front of the sentence and left unattached. How could this happen? In both the positive and negative forms underlying the imperative the tense is attached to will:

pres + will

You will go home.

pres + will

You will not go home.

If pres + will is moved to the front of the sentence in the positive, we have:

pres + will

Will you go home.

And many people feel that this is one form the imperative can take. This rearrangement of sentence elements is one you should be familiar with. It involves bringing tense + M, be, or have (or tense alone) to the front. We called it T_Q. It is the kind of rearrangement which occurs in the yes-or-no transformation, which then becomes a question. But in the case we are talking about here, the string doesn't become a question; it becomes an imperative. We have found that this involves first the elimination of will.

pres + you + go + home

? you go home.

And then the elimination of you

pres + go + home
Go home.

What happens in the negative if we go through these steps? The rearrangement of elements by T_Q gives us

pres + will
Will not you go home.
(Won't)

If will is then deleted we will have

pres + not + you + go + home
? *not you go home.

The elimination of you gives us

pres + not + go + home
? *not go home.

What remains to be done? The unattached tense requires the addition of do which produces

pres + do + not + go + home
Do not go home
(Don't)

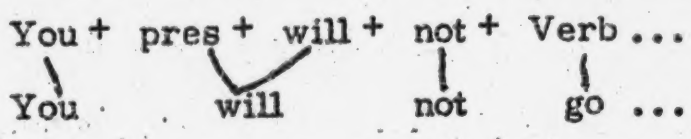
Apparently this same set of rules will account for positive imperatives and for negative imperatives. The negative transformation produces a situation where it is necessary to add do. But in both kinds of imperatives the first step is rearrangement of elements by the transformation which we have called T_Q. We have discovered that in this particular way there is a relation between questions and imperatives.

Writing the rule:

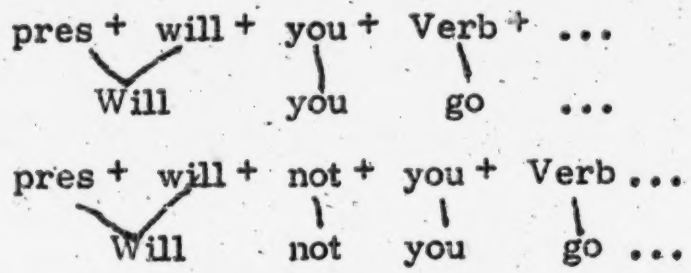
We have discovered several things about imperative sentences.

1. Underlying every imperative is a kernel sentence which contains You + pres + will + Verb + ...
   You will go ...

2. In addition, negative imperatives have <u>not</u>, the result of the negative transformation.



3. The kernels first go through T_Q, which pulls the tense + will (not) to the front of the sentence.

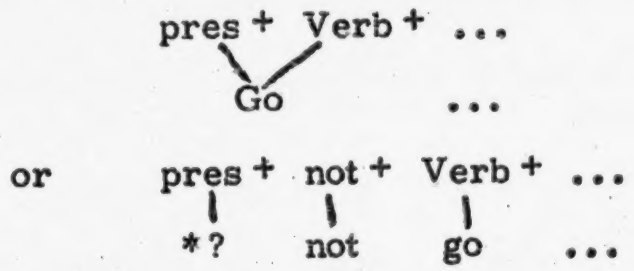


4. Because the sentence is to become imperative the <u>will</u> is deleted. This results in

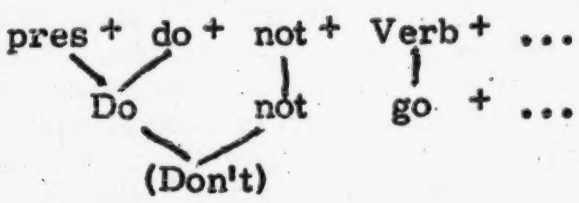
pres + you + Verb + ...

or pres + not + you + Verb ...

5. Then the <u>you</u> is deleted.



6. In the negative we are left with an unattached tense which requires the do-support transformation.



We can see now why we couldn't write a rule which simply deleted <u>will</u> and <u>you</u>. It would not have explained the negative imperative.

These facts show that there is a fairly complicated structure underlying imperative sentences. But they also show that there is a close relation between positive and negative imperatives. In fact the same steps underlie both, so that one set of rules accounts for both.

They also show that there is a certain relationship between imperatives and questions. They both have the elements of their kernels rearranged by T_Q. If we can indicate these facts in a rule the orderly progression of steps and their relation will be much clearer. How can this be done? We will need to go back to the first Phrase Structure Rule which indicates that a sentence may or may not be negative, and may or may not be a question.

Rule (1) S $\longrightarrow$ (Q) (Neg) NP + VP

Because sentences may be both questions and negatives at the same time the rule is written to show that both choices are possible.

Now we must ask if a sentence can be both a question and an imperative at the same time. A little investigation should show that it can't. A sentence may be either a question or an imperative; but it can't be both at the same time. We can't give a command and ask a question at the same time. However, as in the question and the negative, the direction a sentence will take is indicated in the first rule. We want to show that a sentence may be either a question or an imperative, but that it doesn't have to be either. So we will add the symbol Imp to the first rule in brackets with the Q to show that a sentence may be one or the other, and in parentheses to show that either is optional.

$$S \longrightarrow \left(\left\{ \begin{matrix} Q \\ Imp \end{matrix} \right\} \right) \quad (Neg) \quad NP + VP$$

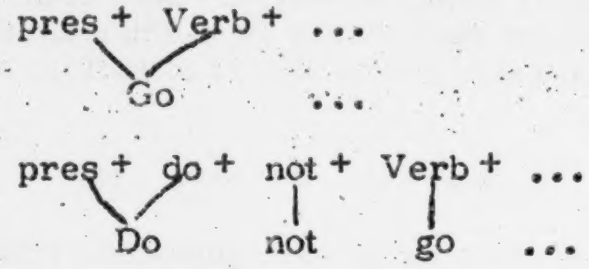
The underlying kernel sentence of an imperative, then, is one which contains the symbol Imp. And if Imp is selected, the NP must be you; the tense must be pres and the sentence must contain the modal will, and no other auxiliary. The string may contain the symbol Neg also. We can show that Neg is optional by putting it in parentheses. The underlying string for any imperative, then, can be written this way:

Imp (Neg) you + pres + will + Verb ...

The Negative transformation places not after will and the Imp triggers the set of transformations which delete will and you and make it necessary to add do-support in the case of the negative.

T_{Imp}	Imp + you + pres + will + (not) + Verb ...	T_Q
	pres + will (not) + you + Verb ...	$T_{delete\ will}$
	pres + (not) + you + Verb ...	$T_{delete\ you}$
	pres + (not) + Verb ...	

Not is placed in parentheses to show that it may or may not be present. If not is present the do-support will operate so that the final string will be either



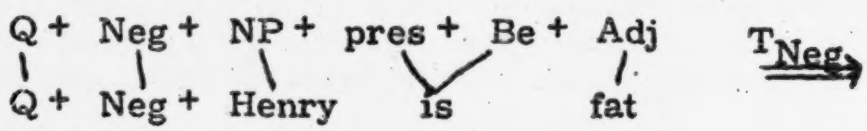
Exercise 6: Give the kernel string underlying each of the following:

1. Go away.
2. Stand back.
3. Eat your lunch.
4. Do not go out late.
5. Roll that barrel.
6. Open the door.
7. Do not open the door.
8. Get smart.
9. Do that problem last.
10. Stay put.

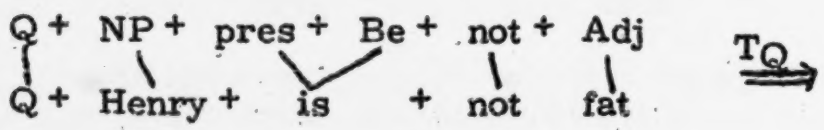
Exercise 7: Write the underlying kernel sentences and their symbol strings for the following and show the steps of the transformation which resulted in the sentences.

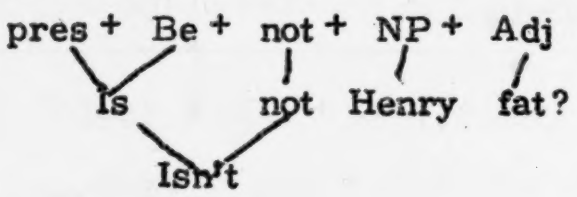
Example: Isn't Henry fat?

Kernel



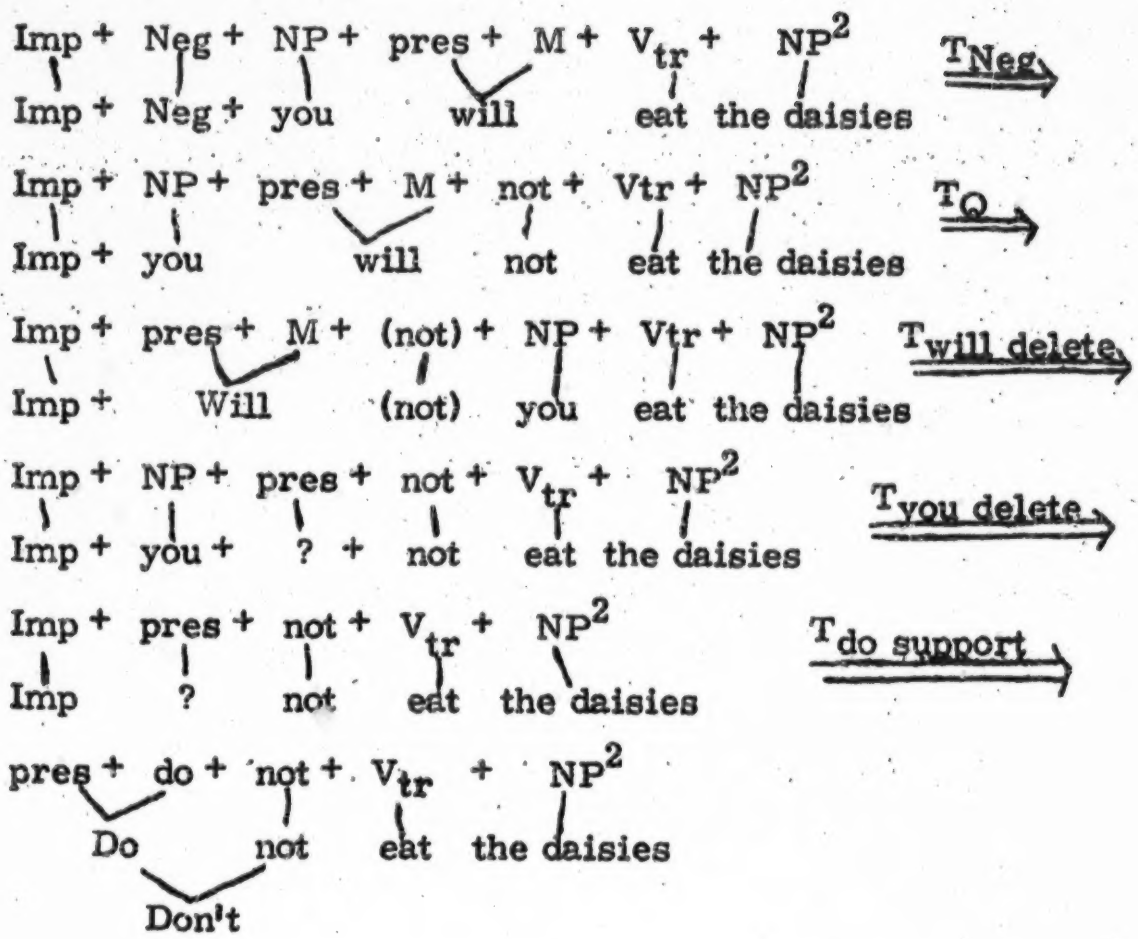
T_{Neg}





Example: Don't eat the daisies.

Kernel


Imp + Neg + NP + pres + M + V_{tr} + NP^2
T_{Neg}
Imp + Neg + you will eat the daisies
Imp + NP + pres + M + not + Vtr + NP^2
T_Q
Imp + you will not eat the daisies
Imp + pres + M + (not) + NP + Vtr + NP^2
$T_{will\ delete}$
Imp + Will (not) you eat the daisies
Imp + NP + pres + not + V_{tr} + NP^2
$T_{you\ delete}$
Imp + you + ? + not eat the daisies
Imp + pres + not + V_{tr} + NP^2
$T_{do\ support}$
Imp ? not eat the daisies
pres + do + not + V_{tr} + NP^2
Do not eat the daisies
Don't

A.
1. Close your books.
2. Block that kick.
3. Find your partner.
4. Don't forget ice cream.
5. Don't pick a fight.

B.
1. Aren't you coming tomorrow?
2. Didn't you hear the assignment?
3. Remain in your seats quietly.
4. Aunt Mary didn't buy the tickets.
5. Don't write on the desks.